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## ORIGINAL ARTICLES.

### ROENTGEN-RAY EXAMINATIONS IN INCIPIENT PULMONARY TUBERCULOSIS.[1]

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DURING the past three years I have seen about 275 cases of pulmonary tuberculosis, and I have examined about 165 of the patients by means of the X-rays.[2] In making these X-ray examinations my attention was early directed to the darkened apex and the shortened excursion of the diaphragm, which were signs common to nearly all of these cases, and it seemed to me that these appearances warranted further study with reference to their usefulness in detecting pulmonary tuberculosis in the incipient stage.[3] It is this part of my work with the X rays that I am to have the pleasure of laying before you this morning, or, rather, such portions of it as may be presented in the few minutes at my disposal. I will first ask your attention to a few incipient cases, in choosing which I have taken only those in which the diagnosis was confirmed by finding the tubercle bacilli or by reaction to the tuberculin test. I have divided these patients, for convenience, into two groups: First, those with slight physical signs, but no râles except in Case II. Second, those without physical signs—that is, whose lungs had been found normal by auscultation and percussion. In some of these an X-ray examination was made for the purpose of determining the size of the heart, and not because the lungs were suspected, but during the course of this examination the lungs were found to be abnormal. The patients in both groups were all hospital patients.

*First Group.*—I described three cases in the paper presented to this Association at the last meeting, which were sufficiently typical of the first group, namely, that with slight physical signs, in which the X-ray examination was of assistance. I will cite here five more such cases to add to the evidence brought before you at that time.

CASE I.—Michael H., aged thirty-six years. Entered March 7, 1898, with acute articular rheumatism, which began five weeks before entrance, with swelling in the knee, which extended to one hip, then to the other, then to the left ankle. Ten days before entrance both hands became red, swollen, and painful; five days before started again in the knee, right hip, right hand and shoulder. Physical examination of the lungs showed good resonance and respiration throughout. On March 10th the left wrist was red and painful. On March 18th this condition improved under salicylates. Practically well.

*March 8th. X-ray Examination.*—This was made to determine the size of the heart, as I was then making X-ray examinations of this organ in all cases of acute rheumatism. The apex of the right lung was found to be shaded as compared with the left lung; excursion of the diaphragm on the right side two and one-quarter inches; on the left side three and one quarter inches.

After this examination auscultation and percussion showed slight dulness on the right side from the apex to the second rib; tactile fremitus was increased, expiration prolonged.

*14th. Second X-ray examination* pointed to the right lung as the seat of the trouble, as before.

One milligram of tuberculin given, later two milligrams given, finally four given. Patient reacted to this last dose. Discharged April 7, 1898.

In May, 1899, he returned to the out-patient department, and Dr. Bartol kindly reported to me that he found no physical signs in the lungs.

The following case is inserted because I was able to watch its progress as it ran nearly the whole of its very acute course in four months, and largely in my service. It, as well as the other cases that I have seen, shows that in acute tuberculosis we may be warned of the rapid progress of the disease by making two or three X-ray examinations at intervals of a week or so, and thus have another means of recognizing the serious character of the attack.

CASE II.—Sarah H., aged twenty-three years. Entered the Boston City Hospital, April 20, 1896, with acute articular rheumatism, first in the right ankle, then in the left ankle and right elbow. She had had cough, with bloody expectoration, for two weeks. The respiration and resonance in both lungs were good throughout. Heart by percussion seemed enlarged to the right.

On April 24th an *X-ray examination* was made to determine the size of the heart. This showed that the heart was not enlarged to the right, but there were signs of tuberculosis on the left side, namely, the left apex was shaded and the excursion of the diaphragm on

[1] Read at the sixteenth annual meeting of the American Climatological Association, held at New York, May 9, 10, and 11, 1899.

[2] The static machine which I now use for X-ray examinations has four revolving plates six feet in diameter and four fixed plates six feet four inches in diameter.

[3] In this paper I have presented more fully questions which I first brought out at medical meetings in 1896 and published in the *Medical and Surgical Reports of the Boston City Hospital*, January, 1897.

the left side was two inches, while on the right side the apex was clear and the excursion of the diaphragm was two and five-eighths inches.

Physical examination, after X-ray examination, showed many cracking râles over lower part of left front and axilla.

On May 6th nearly the whole of the left lung was shaded, and the excursion of the diaphragm was shortened by one-half an inch and moved one and one-half inches only. The apex of the right lung was now also darker than normal, and the excursion of the diaphragm was two and one-eighth inches. On May 12th the left lung was still darker than it had been, and the excursion of the diaphragm was reduced to one inch. Patient up and about. On May 17th the excursion of the diaphragm was reduced still further, namely, to one-half inch on the left side and to one and one-half inches on the right side.

The appearances seen in the X-ray examination were confirmed by finding tubercle bacilli. Patient died in July, 1898.

CASE III.—Tofilus K., aged thirty-five years. Entered the hospital, January 11, 1899, with acute articular rheumatism. Physical examination: Increase of vocal resonance and fremitus, and marked whispered bronchophony in the right apex behind to an inch below the spine of the scapula. Over this area respiration was roughened and expiration much prolonged, but there were no râles and no dulness.

*X-ray examination* was made in order to determine the size of the heart. Upper half of the right lung was shaded; excursion of the diaphragm on this side one and one-half inches; on left side two inches. Tuberculin was given; reaction. Temperature 102° F.

CASE IV.—Dennis H. F., aged twenty-eight years, entered the hospital, September 6, 1898, with malaria. While in the hospital he had some cough and bloody expectoration. Physical examination: Fremitus increased over the whole of the right side, especially at the apex; voice sounds also more marked on right side; no râles heard anywhere. No tubercle bacilli found in the sputa.

*X-ray Examination.*—Left side less clear than right. Excursion of the diaphragm on the left side five-eights of an inch, on the right side one and five-eighths inches. Three milligrams of tuberculin were given after the temperature had been running from normal to 99° F. for some time. Temperature rose in eighteen hours to 103° F.

CASE V.—Sadie McD., aged twenty-four years. Entered the hospital, April 6, 1898. Question of typhoid fever; temperature varied from 100° to 104° F. Was irregular. Physical examination of the lungs at entrance: Resonance somewhat diminished over fronts of both chests below clavicles; otherwise good. Respiration good throughout. Widal's test negative.

*X-ray examination* showed a well-marked shading on the left side as compared with the right. Excursion of diaphragm on the left side one and three-quarters inches; on the right two and one-eighth inches. After the X-ray examination had been made the chest was again percussed, and it was thought that the percussion note on the left side was less resonant than on the right side. One-half milligram of tuberculin was given, then 1 milligram, then 3 milligrams; reaction.

It will be noticed that three patients in this group had acute articular rheumatism. I have been struck with the frequent association of rheumatism and tuberculosis in these and other similar cases.

*Second Group* (four patients), namely, those without physical signs, that is, whose lungs were normal by auscultation and percussion.

CASE I.—Mary C., aged twenty-five years. Hysteria. Said she vomited about a quart of blood about three days before and again that morning. Did not raise any blood while she was in the hospital. March 20th, physical examination of lungs: Resonance and respiration good.

*April 1st, X-ray Examination.*—Excursion of the diaphragm on the right side two and one-quarter inches. On the left side three and one-quarter inches. Three subsequent X-ray examinations showed a shortened excursion on the right side. Patient reacted to tuberculin. Temperature 105° F.

CASE II.—Bertha M., aged twenty years. February 18, 1899, physical examination of lungs: Resonance and respiration good.

Two *X-ray examinations* showed a darkened apex and a shortened excursion of the diaphragm on the right side. Patient reacted to 10 milligrams of tuberculin. Temperature 101.2° F.; malaise.

CASE III.—Julia D., aged twenty years, entered the hospital, March 13, 1899, for what was thought might be typhoid fever. No loss in weight. Unusually well-nourished and well-developed. Physical examination of the lungs showed resonance good throughout, respiration clear and distinct.

*X-ray Examination.*—Right apex to about the third rib shaded. Excursion of the diaphragm on the right side one and five-eighths inches, on the left side two and three-quarters inches. March 25th, 5 milligrams of tuberculin were given; reaction. Temperature 103° F.

*April 14th.*—Jerky respiration on the right, but nothing that can be considered abnormal.

CASE IV.—Joseph M., aged nineteen years, entered the hospital, February 6, 1897. Physical examination of the lungs showed good resonance and respiration throughout.

*March 12th* an *X-ray examination* was made in order to examine the heart. Right lung darker from the apex to the third rib. Excursion of the diaphragm two inches on the right side, two and one-half on the left side. No signs by auscultation and percussion at this time.

*21st. Second X-ray Examination.*—Whole of the right side darker than the left. Diaphragm seen only in full inspiration on the right side; excursion on the left side two and one-half inches.

*April 19th.*—Physical examination: Some dulness of upper part of the right chest. Respiration diminished. No râles. Vocal and tactile fremitus very slightly increased. Resonance and respiration good over the left chest, both front and back.

*25th.*—Physical examination the same as on April 19th.

*27th. Third X-ray Examination.*—Right side darker than normal throughout, and on the left side darker from the apex to the upper border of the fourth rib. Excursion of diaphragm not seen on the right side; on the left side it was one and three-quarter inches.

*27th.*—Physical examination: No signs on the left side at this time by auscultation and percussion.

Patient died on June 4th. No tubercle bacilli were found at any time, though frequent examinations were made, but on April 13th he reacted strongly to 5 milligrams of tuberculin; marked malaise; temperature 101.5° F.

We see in this second group (of four cases), as well as in similar cases which I have presented elsewhere, that the X-ray examination gave warning of tuberculosis before any departure from the normal was obtained by auscultation and percussion. Let me indicate one or two reasons why we may thus detect increase in density in cases where it is not found by auscultation and percussion. First, if the density is much below the surface of the lung, as in central pneumonia, its presence is not recognized by auscultation and percussion, but a shadow of the consolidated portion of the lung is cast on the fluorescent screen as surely as if the pneumonic process were near the surface. This I have observed in several cases. Second, judging from the tests described below, made at the hospital in 1896 with lungs taken from post-mortem examinations, a shadow may be thrown on the fluorescent screen by a slighter degree of congestion than might be detected by auscultation and percussion. For these two reasons the X-ray examination may be the more delicate test under some conditions.

*Tests.*—Two feet above a Crookes tube I placed a piece of cardboard on which I set a thin, vulcanite cup—both the cardboard and the vulcanite offered little resistance to the rays—and beside the cup a piece of pneumonic lung, two inches thick (dense enough to sink in water), and while looking at the shadow of the lung on the fluorescent screen, which was held above the cup and the lung, I poured water into the cup until its shadow corresponded in darkness to that of the lung. I then measured the depth of the water in the cup, and found it was 2¼ inches. Further experiments showed that a much congested lung, 1 inch thick, which did not sink in water, corresponded in its shadow to 1 inch of water in the cup; also that a normal lung blown up to about the distention of full inspiration corresponded, where it was *3 inches thick*, to only ¼ of an inch of water. In other words, a lung in pneumonia or tuberculosis will, if sufficiently diseased, offer several times as much resistance to the X-rays as the same thickness of a healthy lung—that is, a very dense lung in either pneumonia or tuberculosis offers about as much resistance to the rays as the liver, and a much congested lung offers several times as much as a healthy one. One lung which I examined was normal except for a small, red nodule, less than ½ an inch in diameter. When this lung was looked at under the fluorescent screen this nodule was seen as a dark spot on a bright ground, the whole thickness of the lung casting less shadow than the small, dense substance. These experiments show that congestion increases the opacity of the lungs to the rays, and certain amounts of it, or of edema, even if there is no other pathological process, may sufficiently increase their density to cast a shadow on the fluorescent screen, and yet perhaps not increase it enough to give marked signs by auscultation and percussion.

Further, the lungs are brighter in full inspiration than during expiration. If a pasteboard box containing water, one-half an inch deep, be held over the chest of a large, healthy man, its shadow may be seen in inspiration but not in expiration.

It is perhaps best to repeat again the statement that the diagnosis of tuberculosis is not made by an X-ray examination alone, but it does give early warning in some cases of a departure from the normal in the lung which puts us on our guard and enables us, in conjunction with the history, etc., to make the diagnosis of tuberculosis, and thus in many early cases to arrest its progress by proper care.

The following case is suggestive:

C. B., a young man, whose father died of tuberculosis, was brought to me for an X-ray examination and for consultation. He had a history of recent rapid loss of flesh, but there were no physical signs, no temperature, no cough, and the pulse was not rapid. Both his physicians suspected tuberculosis, and he was being kept under observation until more definite signs should develop. The X-ray examination showed a darkened apex of one lung and a much shortened excursion of the diaphragm on the same side. My advice was that he should be sent directly where he could have good food and lead an out-of-door life for some months. This advice was followed. Four months later his family reported him better than he had ever been at any time in his life.

I believe that we may regard the successful care of early tuberculosis as dependent largely upon maintaining the condition and well-being of the patient at as high a point as possible.

The X-ray examination is also useful from another point of view. Physical signs of increased density at the apex and râles, if not confirmed by an X-ray examination, may be questioned in cases where the history and other evidence do not bear out these signs. I have seen seven cases where an X-ray examination prevented my taking too unfavorable a view, though the physical signs indicated beginning tuberculosis. In none of these has tuberculosis developed, and in such of them as I could test with tuberculin there was no reaction.

In doubtful cases two X-ray examinations should always be made at an interval of some days, in order that the second examination may verify or disprove the first, as there are various conditions, that I have referred to elsewhere, which may temporarily give signs similar to those observed in pulmonary tuberculosis.

In studying tuberculosis by the X-rays we usually find that the apex is darkened and the excursion of the diaphragm is shortened;[1] but we may find now and then only a general diminution in the clearness of the outlines of the lungs and of the ribs. This latter condition is found probably in cases where the disease is disseminated, but it is not easy to recognize this slight departure from the normal unless the physician is in constant practice with the fluoroscope.

*Acute miliary tuberculosis* sometimes offers difficulties in diagnosis, and is confounded with some other disease, typhoid fever, for example. An X-ray examination of the lungs, by showing a marked shadow on the screen, though at the same time these organs are hyper-resonant to percussion, may direct the physician to a correct diagnosis. I examined with the X-rays a lung taken from a patient who had died of miliary tuberculosis, and found that where it was two inches thick it cast a shadow on the screen as dark as that made by water 1¼ inches deep in an aluminum cup.

I have seen two patients about again whom I had thought had miliary tuberculosis. The fluoroscope showed dark areas in their lungs, and they reacted strongly to tuberculin. They were too weak to feed themselves and feeble beyond any probable hope of recovery, but their health improved, and with it the appearances on the screen as shown by several examinations.

*Other Uses Which Deserve Brief Mention.*—The X-ray examination enables the physician to recognize some *old* or *latent areas* of tuberculosis which might otherwise be overlooked. In some of my patients I have found well-marked evidence of former disease by means of the X-rays, and on inquiry have learned that the original trouble dated back in some cases twenty or thirty years, and in others over forty years. The recognition of old areas of tuberculosis by the physician enables him to guard his patient against the dangers of lighting up the disease afresh.

*Tuberculosis and Pleurisy with Effusion.*—I have seen some cases of pleurisy with effusion in which the X-ray examination gave evidence of increased density at the apex of one lung, although this was not then detected by physical signs. The testimony of the fluorescent screen was confirmed by the finding of tubercle bacilli or by the tuberculin-test.

*Tuberculosis with Bronchitis.*—Here X-ray examinations may be of much service. In several cases of bronchitis I found by an X-ray examination an increased density at the apex of one lung, which had escaped notice by physical signs. In nearly all of these cases tubercle bacilli were found later.

*Tuberculosis with Emphysema.*—The increased density in the lung due to tuberculosis may be so obscured by emphysema that it is not recognized by physical signs, but this emphysematous condition offers no obstacle to the X-ray examination; and the presence of tuberculosis in some of the cases of this class that I examined was confirmed by the finding of tubercle bacilli or by the tuberculin-test. The helpfulness of the X-ray examination where tuberculosis and emphysema are both present is twofold. It not only enables us to recognize tuberculosis where, by physical signs, it is undetected, but also to make a diagnosis of *emphysema* which had previously not been suspected by physical signs on account of the *tuberculosis* from which the patient was suffering.

To sum up: *Incipient Pulmonary Tuberculosis.*—I have seen thus far twenty-four cases, where there were slight or no physical signs, in which X-ray examinations showed signs of pulmonary tuberculosis. In all of these cases the X-ray examination was confirmed by finding the tubercle bacilli or by the tuberculin-test. In twenty-two cases I have made the diagnosis of incipient pulmonary tuberculosis in conjunction with other indications of tuberculosis, such as one or more of the following: Hemoptysis, loss of flesh, morning cough, night-sweats, evening rise in temperature, slight physical signs. In these cases the diagnosis was not confirmed by finding the tubercle bacilli, and the tuberculin-test was not used.

I recall two cases of pulmonary tuberculosis in which I found no constant signs by X-ray examinations, though there were râles, and bacilli had been found.

[1] The shortened excursion of the diaphragm may be due to changes in the lung itself or to pleuritic adhesions which prevent the lung from expanding.

I have recognized by means of the X-ray examinations tuberculosis with emphysema in nine cases, tuberculosis with bronchitis in eight cases, and tuberculosis with pleurisy in thirteen cases. In most, though not in all, of these thirty cases the diagnosis was confirmed by finding the tubercle bacilli or by the tuberculin test.

The traces of old tubercular lesions which were quiescent were apparent to me in a number of cases by means of the X-ray examinations.

I have been assisted by the X-rays to a correct diagnosis in three cases of acute miliary tuberculosis.

In the majority of the remaining cases of tuberculosis in which both a physical and an X-ray examination were made the latter indicated more extensive disease than did auscultation and percussion. Sometimes only one lung was suspected by auscultation and percussion when an X-ray examination showed signs in both lungs.

The reports of the Board of Health of the State of Massachusetts, as pointed out by Dr. Abbott, show that out of 1000 persons dying in this State between twenty and thirty years old 597 die of tuberculosis of the lungs. This fact indicates the importance of careful X-ray examinations of persons between these ages and younger who may have any predisposition to this disease or in whom it may be suspected.

I think it will be useful to compare briefly two methods of making X-ray examinations in diseases of the chest, namely, the one by the fluorescent screen and the other by the X-ray photographs, and the description of a case is a simple way to present the subject.

C. P., aged six years, entered the Boston City Hospital, March 16, 1899, with croupous pneumonia. Illness began on March 13th. Physical signs at entrance were as follows: Resonance and respiration good everywhere, except over a small patch in the left back, from the mid-scapula to the lower angle, where there were bronchial breathing and bronchophony.

*March 17th, X-ray examination* by the fluorescent screen showed a darkened area, 2¾ inches wide, extending outward and upward from the left border of the heart. The excursion of the diaphragm on the left side was ¼ of an inch; on the right side 1 inch.

*31st.* There were no physical signs and there had been none for four days. *A second X-ray examination* showed much improvement, but the dark area was still readily perceived, though it was not so dark as on March 17th. The excursion of the diaphragm on the left side was 1 inch, on the right 1¾ inches.

As on March 31st and the four days previous, there were no physical signs in the lungs of this patient, although the signs of departure from the normal were very patent on the fluorescent screen, the case seemed to me a favorable one in which to make a comparison between the signs of consolidation as recognized on the one hand by the screen, and on the other by X-ray photographs.

Three negatives were made (to see if variation in the time of exposure, or if tubes with different vacuums would bring out anything), one on March 30th and two on March 31st. On March 30th the exposure was four minutes; on March 31st, three minutes, and a second negative, with an exposure of two minutes, was taken with a different tube on this same day (the tube was in all cases three feet away). From these negatives I had prints made, and *in none* of them did I find evidence of increased density in the left lung as compared with the right.

CASE II.—E. L., a woman, aged eighteen years, entered the hospital February 28th. She had pneumonia involving the lower lobe on the left side, which began one week before entrance, February 21st. There was nothing unusual about the progress of the disease. Four X-ray examinations were made, March 1st, 11th, 23d, and 30th, respectively. Neither on March 20th nor afterward were there physical signs on auscultation and percussion; resonance and respiration were good throughout; but I found signs of consolidation by the fluorescent screen, as indicated by a darkened area and shortened excursion of the diaphragm when compared with the right side. An X-ray photograph taken at this time did not indicate disease, and there were no physical signs.

To sum up: On March 30th in neither of these patients were there physical signs, nor did X-ray photographs taken on this day give any indication of an abnormal condition of the lung, but well-marked signs were seen on the fluorescent screen.

Again, in two cases of incipient tuberculosis in young women in whom the disease was recognized first by an X-ray examination with the fluorescent screen I could see no difference in the two sides by the X-ray photograph. In one of these patients I found no physical signs at the time the X-ray photographs were taken; in the other, where the X-ray photograph was taken some time after the disease was recognized on the screen and the disease had progressed, there was slight increase in tactile fremitus and a prolonged expiration on the right side.

The cases above mentioned lead me to believe that in these diseases we may have in the fluorescent screen a more ready, convenient, and delicate method of recognizing an abnormal condition of the lung than we have in X-ray photographs, and the screen has the advantage of revealing the mobility of the diaphragm and heart.

If simple precautions are taken there is not the slightest *risk* even of an X ray burn. I have examined about 3000 patients without a single case of injury or of inconvenience even.

I wish to emphasize the fact that signs may be obtained by an X-ray examination when the disease is limited not only to one side, but is just beginning even on that side, before there are physical signs in the first lung or cough.

It is interesting to note that X-ray examinations show that the disease begins oftener in the right than in the left apex.

In conclusion, I desire again to urge the adoption of a method which aids in the early detection of pulmonary tuberculosis. First, because an early diagnosis gives the best opportunity to arrest the disease; and second, because patients may then be taught early simple precautions which will prevent them from being a source of contagion to others should cough and expectoration develop.

I desire to record again my appreciation of the value of Dr. William H. Rollin's investigations, published in the *Electrical Review*, which have promoted the usefulness of the Röntgen light in medicine and in surgery, and to express my gratitude to him for his untiring readiness to aid me to overcome the obstacles which have beset those who are using X-ray apparatus.

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## CLIMATE AND RENAL DISEASES.[1]

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AT a meeting of this Association, held in 1888, Dr. J. C. Wilson read a paper on "Climate and Bright's Disease," presenting the views held by the leaders of thought in diseases of the kidneys; and more recently Dr. Solly, in his admirable work on "Medical Climatology," has given a comprehensive epitome of the same subject as viewed by himself and the various authorities of the day. There remains perhaps but little to be added as regards the general aspects of the question except to verify, modify, or correct the conclusions already arrived at and to specialize and individualize as observation and experience suggest.

The causal relation of certain climatic conditions for and against affections of the kidneys has been sufficiently established. Their prevalence in temperate climes where variability of temperature is accompanied by moisture, as is found in the inland portions of the Atlantic watershed in our own country, compared with their infrequency in torrid regions is affirmed by all authorities and abundantly supported by statistics; and while all admit that the habits and modes of life of the inhabitants of the former have something, no doubt much, to do with this state of affairs, yet that the climatic conditions *per se*, bear a direct causal relation in precipitating such attacks is thoroughly appreciated.

The conditions of climate acting in this causal manner are variability of temperature associated with dampness. The dampness is not alone represented by the amount of moisture contained in the atmosphere, but what I believe to be of much more vital importance, the dampness of the soil. As our immortal Bowditch pointed out long ago that it is of prime importance in choosing a climate for phthisical patients to also select a dry, porous soil, and *per contra*, that a damp soil is an important factor in inducing or favoring the development of phthisis, so I have no doubt the climatic factor of prime importance in inducing renal disease is dampness of the soil. Next to the respiratory, no system suffers from improper climatic conditions so seriously as the renal. Tucked away though these organs be in the warmest and most protected portion of the animal economy, yet through the workings of the vasomotor apparatus climatic variations directly impress them. If, as is frequently the case and increasingly so with advancing years, they are in a condition of engorgement due to their efforts at elimination of an excess of or an imperfectly metabolized tissue waste, or from other irritating ingredients of the blood as alcohol, lead, etc., if, while in this state, the skin insufficiently protected be subject to cold and especially damp cold the transformation into an inflammatory state is easily made. If this is repeated year in and year out pathological changes must of necessity result and more or less crippled kidneys be the outcome. It is for such crippled kidneys that climate furnishes the most relief. They do their work under favorable conditions well but quickly show their imperfections if unfavorable conditions arise. Such kidneys secrete an abundant urine of low specific gravity, ranging about 1010, without albumin, usually acid in reaction, and sometimes precipitating the urates on cooling. If the possessor of such a pair of kidneys has an attack of acute disease he is apt to present an albuminous urine with casts, and life may be in jeopardy or, as is more frequently the result, renal inadequacy is exaggerated by an increase of the crippling process.

It is in this class of cases that variability of temperature may exert the same deteriorating influence, in some cases inducing an attack of acute Bright's disease, but in a vastly larger number stopping short of this, giving an albuminous urine, not smoky nor possessed of blood-casts, but often associated with evidences of imperfect depuration of the blood. Among these evidences are headache, usually occipital, anorexia, running into nausea and occasionally vomiting and sometimes slight vertigo. These

[1] Read at the sixteenth annual meeting of the American Climatological Association, held at New York, May 9, 10, and 11, 1899.

symptoms are present on awakening in the morning and sometimes wake the patient two or three hours before his accustomed time. They may shade away before or immediately after breakfast, are always absent or greatly diminished by 11 A.M., sometimes to return about 4 P.M., not quite so severe as in the morning and absent entirely by bedtime in all but the severest cases. For this class of patients a proper climate will do much to restore the renal equilibrium. Such individuals are usually in perfect health during the summer months when the skin is active and an out-of-door life possible, but with the onset of the cold and dampness of early fall the symptoms return each year with perhaps increasing vigor unless recognized and the condition carefully treated. Often in spite of the utmost precaution the kidney changes become more and more marked.

During the winter of 1898–1899 a large number of such patients came under my observation. The extreme variability which marked our Eastern coast climate from early in September, through the winter and until the middle of April, with rain or snowfall at short intervals, the air constantly saturated with moisture and at least in the cities the streets continuously wet, the number of respiratory diseases was vastly increased and the number of embarrassed kidneys greatly multiplied. In some subjects the kidney embarrassment accompanied the catarrhs of the air-passages, modifying their course and retarding the convalescence. In others it existed alone. It was usually easily controlled and disappeared in a few weeks; in other instances it developed into acute catarrhal nephritis. So much for the causal relations of climate.

As for the remedial or therapeutic value I will point first to the improvement of this class in the warmer, drier summer months in the same latitude and locality. The modified diet of the summer with its diminished meats, and increased vegetables and fruits no doubt plays no unimportant part in this improvement; but when this feature is persisted in after the inclemencies of the winter appear and systematic exercise, scrupulous attention to the skin and bowels and other hygienic matters have been most carefully persisted in and yet in spite of this the one factor of climatic changes overtops all and reproduces the former condition, one is forced to attribute not a little but the most of the summer's improvement to the climatic conditions associated therewith.

In those cases in which attention to diet, skin and bowels, systematic exercises, etc., with such medicinal aid as may seem wise, fail to prevent attacks of renal incompetency during the winter season I have found a sojourn at Lakewood or Atlantic City of vast benefit. Here the sandy soil dries quickly after a storm, snow soon disappears, and both soil and air are constantly drier except during the actual rainfall. The appetite is usually rapidly restored as the nausea disappears, the headache vanishes, sleep is undisturbed, and in a vew days the change is almost marvelous. The kidneys have resumed their equilibrium and all the functions feel the impress. This experience, coinciding with one's preconceived notions and repeated in a number of cases leads me to present this very imperfect paper.

In conclusion, I would state that as dampness of soil is perhaps the most objectionable climatic factor in the induction and aggravation of crippled kidneys, for those residing where this factor prevails and for crippled kidneys in general the sunny, sandy seashore resorts, especially where dryness of air and sunshine are associated with a suitable soil, furnish an aid to relief of unquestioned value.

There is no occasion in most of these instances to send such invalids to far distant points in search of a suitable climate. In the inland cities of our Atlantic watershed, and even in those cities near the coast where an impermeable pavement aggravates or perpetuates the dampness, the dry, sandy seaside resorts to be found near at hand from New Jersey to Florida, where comfortable living is possible and where patients can take their out-of-door exercise dry shod, furnish an easy, ready and hence available aid to embarrassments of the renal functions which constitute the vast majority of renal diseases met with, and which would otherwise drag their weary length along until the warmer and drier climate of early summer brings relief, while all the time histological changes are possibly carrying the crippling to the danger limit.

I have no desire to detract from the great advantages of the drier and continuous warmth of the great Southwest for the more marked cases, nor of the Hot Springs of Virginia and Richfield to bring recalcitrant kidneys back to their normal equipose. For severer cases these may be requisite. My wish is to give my experience as to the value of more accessible places which supply the requisite aid in many cases when the renal changes are still within the possibility of harmonious work under favorable conditions.

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## A NEW OPERATION FOR INGUINAL HERNIA.[1]

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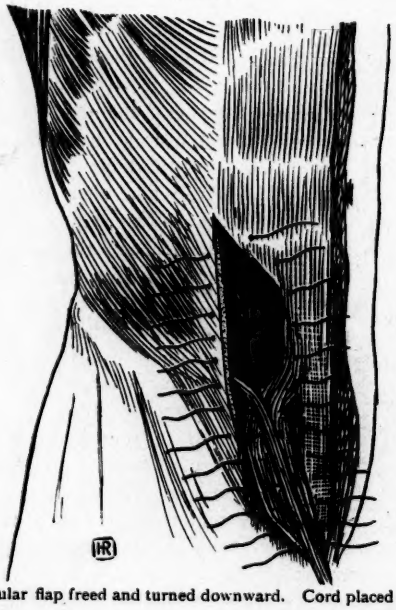
THE results obtained by Bassini's well-known method are so brilliant that it may seem arrogant to make any claims for new methods. Still, as Bas-

[1] Read before the Surgical Section of the New York Academy of Medicine, March 13, 1899.

sini himself admits that he had recurrences in three per cent. of his cases and other surgeons even more, it is legitimate to look for further means of fortifying the abdominal wall. Eleven days ago I tried to accomplish this in the case of a patient upon whom I had previously performed Bassini's operation, and who had presented himself with a recurrence. The modus operandi is as follows:

The incision is made down to the internal surface of Poupart's ligament alongside the outer margin of the rectus muscle, exposing its lower third down to the shelving portion of Poupart's ligament. The sac is isolated from the cord, and ligated and cut off within the internal ring. While the cord is held away the cut aponeuroses are dissected backward and an oblique incision is made which divides the lateral fibers of the rectus muscle transversely to the extent of about one-third of its width, a little below the lower third of the muscle (Fig. 1). The

FIG. 1.



Muscular flap freed and turned downward. Cord placed above flap.

incised fibers are then so far severed from the remainder of the muscle that their upper portion when turned downward will reach Poupart's ligament without any considerable tension. This turned flap is now fastened to the conjoined tendon at one side, and to Poupart's ligament on the other, with formalin catgut after the cord has been placed upon it so that the cord rides, as it were, on the muscular flap. The gap caused by the resection of the flap is now covered by uniting the outer margin of the rectus muscle with the broad abdominal muscles. Then the cut aponeuroses are united above the cord by a continuous suture, thus forming a very strong posterior *muscular* wall, which in large and direct hernias may be of importance (Fig. 2). It may also be that the removal of the sac may thus be rendered unnecessary in small hernias.

The patient showed no reaction after the operation, and the result seems to be perfect. I have performed the same operation twice since; once on

FIG. 2.

Flap held by sutures at Poupart's ligament as well as at the conjoined tendon. Gap caused by the elimination of muscular portion united.

a boy eight years of age, and once on a girl of six years. Thus far in both cases the result has proved to be satisfactory. The real value of this method, however, can only become evident after more experience and observation. The question of the gap as well as that of the division of the nerves and of cutting off of some of the blood-supply has been well considered, and the objections seem to be only theoretical.

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## *CONCERNING COLORADO.*

BY SAMUAL A. FISK, A.M., M.D.,
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IT is a popular phrase in Colorado that one has come West either for health or wealth, and in the popular mind there are two classes in the community, the health-seeker and the wealth-seeker. Experience has ample justification for the existence of each. On the last day of the old year I met casually on the streets of Denver a man in robust health and

in active business life who came there from an Eastern city some seven years ago on account of some pulmonary complication. Since that time he has had many a strain, financial and from illness, and yet has weathered them all and to-day is a member of one of our leading mercantile houses and has taken out a life insurance policy in a representative company after a rigid examination and with a full knowledge on the part of the examiner. He stands as a type. What is true of him can be said of thousands in Colorado. Not that they have all taken out life insurance, but because from an almost certain death they have secured a restoration of heath so that they are well in the sense that Dr. Williams uses the terms, *i.e.*, they are able to follow their occupation without any recurrence of their former symptoms.

This is a simple statement on paper but it is of tremendous importance to the individual and to the masses. Pulmonary tuberculosis is the great foe of mankind. At the present day one so afflicted is regarded with suspicion, almost as though he were a leper. "On no account whatever must you ever enter my house again; you are a source of danger to everybody," writes one. This is a panicky fear, it may be, for which the medical profession may be somewhat responsible, but warranted perhaps by the appalling annual mortality from pulmonary tuberculosis, which causes fully twelve per cent. of all deaths, and is estimated to have killed at least 133,000 persons in the United States during the year 1894. So far injections of various sorts and medicinal remedies have not proved of avail in treating this disease, and we have to come back to the lesson taught by the man whom I have cited, that of "climatic cure." Quotations from eminent authorities on which to ground this belief abound but one from Sir Andrew Clark will answer the purpose: "I am as sure as I can be," he writes, "that recoveries from phthisis, judiciously treated at high altitudes, are much more numerous and much more lasting than those treated by any other method at any other place." And Dr. Herman Weber adds, after speaking of European stations: "More important to us in the treatment of phthisis are the health-resorts of America. . . . In the Rocky Mountains of the United States we possess indeed an endless variety of mountain climates." Since these remarks were made Dr. Solly has given figures which, taken from a large range of observers, amply confirm what these writers say. His data show "improvement" in 59 per cent. of all cases treated in low climates (ocean, island, coast, inland sanitariums, and desert), and in 76 per cent. of those treated in high climates, from which he draws the conclusion: "This inquiry has clearly demonstrated two things, *viz.*, that the majority of consumptives do better, other things being equal, the further they are removed from the sea, and that they do better in high than in low altitudes." But one naturally asks, "Why go to the mountains? are not cures brought about in New York City and in Boston? Are not Abana and Pharpar better than all the waters of Isreal? Assuredly recoveries have occurred and do occur right on the seacoast, but in such a serious matter one cannot afford to trifle. The best is none too good. If the house is on fire one does not fool with it or wait for the flames to become more extensive before setting to work to put out the fire, and that in the best way at his command. Why should one take risks with his health that he will not take with his house?

What, then, are the advantages of the high altitudes of the Rocky Mountains of Colorado in the treatment of pulmonary tuberculosis? There has been a great deal of theorizing on this point, good, bad, and indifferent, substantiated and unsubstantiated; but what is wanted is plain, everyday experience. In reading all that has been said on the subject, one is often reminded of

> If this young man expresses himself in terms too deep for me,
> Why what a very singularly deep young man this deep young man must be!

The questions of free ozone with its insufficient evidence of terrestrial electricity and the necessity for it to pass properly over the system; of the influence of diminished atmospheric pressure in causing deeper inspirations and so bringing into play heretofore unused and diseased portions of the lung, the writer does not profess to know much about. He remembers that experience has not always borne out conclusions supposed to be established as facts, and that even if Tyndall did state that spontaneous generation did not occur at the height of the Bel Alp (7000 feet), and even if Miquel did count the number of bacteria in ten cubic meters of air at various heights, from that of the Rue de Rivoli up to 2000 or 4000 meters, where he found none, nevertheless we must not infer that altitude *per se* produces asepsis, as we know that wherever large numbers of human beings congregate there the purity of the air is liable to be impaired. He also recalls that experiments have shown that Koch's results with reference to the effects of sunshine upon the bacillus tuberculosis are not to be universally applied. Bearing these things in mind he thinks that it is wise not to be too hasty in our conclusions on matters of opinion or of theory. One thing is patent, as Solly has shown; more patients do well in high altitudes than in low. There is something in the location that improves the powers of repair of the human system, that at least increases the resistance of the body to the rav-

ages of the disease. Altitude seems to be a factor. In Colorado the so called "invalid belt" varies from 4600 to 8000 feet. Then there are the many climatic conditions which conduce to an out-of-door life, which in itself leads to repair. For instance, the air is remarkably dry, and in a dry air the sensations of heat and cold are less intense; the amount of rain- and snow-fall is slight in comparison with that which prevails along the Atlantic coast; by reason of it Denver ranks as a cool, stimulating climate; the daily motion of air (wind) is much less than prevails in our large cities, from which many of our patients come, being 101 miles less than the daily average of Boston, 85 miles less than Chicago, 62 miles less than Philadelphia or New York; and above all there is almost unexcelled sunshine. The Weather Bureau's statistics on this point show for an average of ten years that Denver had only fifty-one cloudy days in a year. By the term cloudy is meant that the sky is from eight-tenths to completely obscured by clouds. This gives an average of 314 days in a year when the patient can be out of doors, and more than that, for many of the so-called cloudy days are days when a patient can comfortably be out. This is a state of almost perpetual sunshine; where one makes engagements without the proviso "if it does not rain;" where umbrellas are so seldom used that they get misplaced or lost.

From September to April, inclusive, in a year taken at haphazard, we find only 11 days that were completely cloudy, that is, 11 days out of 242 that were cloudy all day long so that an invalid would have to be housed. But one should regard the actual as well as the possible sunshine. Here the figures are still more striking, showing an average of 65 per cent. per annum as against 49 per cent. in Philadelphia. The statistics for November, 1898, give Denver a total of 77 per cent. of possible sunshine, and for December, 85 per cent. Moreover, the possibility is great, for the stretch of plains to the east and the distance of the mountains to the west from Denver allows the sun to shine on the city all day long. This gives a possible 9 hours 26 minutes of sunshine for Denver on the first day of January as compared with 4 hours 57 minutes at Davos Platz. I have heard the difference likened to that of an invalid getting out of bed in a room with and without a fire. In other words, with a sunrise at 7.20 instead of at 10.20 o'clock the air is warmed for the patient when he has had his breakfast and starts out.

We must not neglect to mention the character of the soil, which is sandy, gravelly and sloping. There are few surface streams. Many of the beds are dry arroyas, known as "sand creeks," and the snow from the mountains seems to pass away in underground currents. Artesian borings strike water almost anywhere. On the eastern slope the decline, and consequently the drainage, is gradual from that of Denver (5280 feet) to the Missouri River at Omaha (1100 feet).

"Some climates," says Weber, "are apt to produce a feeling of langor and diminished inclination for food, while others raise the nervous system, improve the appetite, digestion, sanguinification, and muscular energy, and facilitate the elimination of used-up matter," just as there are remedies, like morphin, which soothe but check the appetite and nutrition, and others, like the bitter tonics, which improve by stimulating. It is this bracing quality of the Colorado climate that is characteristic of it. The people of the State are essentially a buoyant race. They will not down. Every morning the bright sunshine brings renewed hope and vigor. As the man said, whom I met on the street, as already mentioned, "Isn't this stunning air?" It is hard to stay indoors. Former students and college men complain that Nature is too inviting.

But writers on Colorado have been accused of concealment, of a *suppressio veri*, not of misstatement. It is said, for instance, that nothing is mentioned about the winds. Colorado is classed in the popular mind with that large country "Out West" (somewhere, just where is indefinite), where they have blizzards and where persons are blown into eternity. Facts count for little. There is some error in the Weather Bureau's figures. It cannot be that there is so great a difference in favor of Denver, as against Boston, Philadelphia, and New York as the statistics show. Even the inhabitant of peaceful old Northampton will forget about its tornado which lifted a load of hay completely from the wagon and landed it in the street, tore the bridge across the Connecticut from its piers and dropped it in the river, to say nothing of having laid low more than one hundred of its majestic elms, when he talks about the frightful blizzards "Out West," and therefore, because west, in Colorado.

It is also said that Colorado has intolerable dust storms. These critics forget that a dry soil is one of the necessary accompaniments of her climatic conditions. To an air so dry that salt does not need to be dried in the oven; that shoes do not mould if left unworn; that polished steel will remain for years without rusting; that soda-fountains do not sweat in hot weather; nor collars wilt; that crimps stay in the hair, add a small precipitation, an intense and constant sunshine, and a naturally sandy soil—such conditions conduce, especially in the city, to the pulverizing of the soil, and a

slight wind, again more marked in the city where the streets act as a funnel, will pick it up and make the presence of the dust felt. The prevalence of the dust storm, like most things that are disagreeable, is overestimated and remembered, and given undue prominence. The Eastern woman will not forget that her skirts got dusty in March and April, instead of muddy, to which she has been accustomed, and her irritation never subsides. I do not mean to say that we do not have at times winds which send the dust flying and render being out unpleasant, but such times are few and far between as compared with the general run.

Again, it is said that Colorado does not have constant balmy weather and Italian skies. Who said that she does? Certainly not the well informed. It is not her fault if one goes there in midwinter with only summer clothes. This is by no means an exaggerated statement, but poor Colorado has to take the blame. While it is not an uncommon thing to sit with open doors and windows in the heart of January at midday, or to swing in the hammock, or to picnic; the climatic conditions, the rarefied air, etc., are such that the night (when the invalid should be indoors) may be intensely cold. Sometimes, too, the days are cold. One cannot pluck roses out of doors in midwinter in Colorado. The ground is covered with snow at times and there may be a few days of sleighing, but it does not last long and one is surprised on the plains to see this whiteness fade away without making the air moist or the ground damp. It is constantly being hurled in our teeth that So-and-So came to Colorado and did not improve, in fact, may have died. Such is undoubtedly the case. It is not every one who gets well, or who even improves. But the number of the latter would unquestionably increase were better management shown, especially in the selection of the individuals that should come. On this point there should be the best of medical advice. It is folly, if not cruelty, to send patients thousands of miles from home as a last resort when they would not gain anywhere. Then, too, many who do come so order their lives that it would be a miracle if they got well. I am sorry to say that many drink themselves to death. They are falsely impressed with the idea that whisky is a good thing for consumptives, and why not "gallons of it?" Others smoke themselves to death or live thoroughly unhygienic lives. How can one improve if he smokes all day and all night too? If he sits in a stuffy room filled with tobacco-smoke and plays poker when he should be asleep or in the fresh air? Yet such things are not infrequent. I imagine that one could drown even in Siloam if he were determined to do so. Still others under a false impression that exercise is the thing, overdo; they climb mountains, or ride horseback on the run, or puff at their wheels, or overwalk when they should be quietly basking in the sunlight, wrapped in rugs and thoroughly warmed. Still others freeze to death, not literally, but they have brought their summer clothes and are not prepared for a cool climate, and being of a low reaction at the best they cannot endure the rigors of the cold. Others, it may be, are insufficiently fed. It takes money to make the mare go in Colorado as well as elsewhere, and I am sorry to say many and many a poor unfortunate is landed at our doors like a baby in a basket, without any provision having been made for his maintenance afterward. Our hospitals are full of them, our sympathies go out to them, but they are always with us. We do what we can, but almost invariably with the same result. They do not have a fair show, and they go from bad to worse, physically, sometimes morally, and die.

Some years ago I heard a prominent physician say: "I have given up sending my patients to Colorado; they can't get anything to eat." He showed his inaccurate information by his statement. Good, nutritious food is to be had and plenty of it. It may not always be of the kind that one is accustomed to. One cannot expect a bluefish right out of the water 2000 miles from the ocean, but one can be on the coast of Maine and fare mighty badly on the fish question. The eminent gentleman before mentioned would be agreeably astonished at the excellence of the oysters, or clams, or halibut, or whitefish, or salmon, or cod, or even the broiled live lobster that could be put in front of him in Denver. It is needless to say that the meats are of the best, and as for the vegetables and fruits they cannot be surpassed. Flour, milk, butter, eggs, and such staples are to be had as good as anywhere in the world. Of course many people prefer their roasts done to death, and there are those in Colorado, as elsewhere, who still fry their beefsteaks.

But after making all allowances, the fact remains that the Colorado climate is mighty good, perhaps the best in the world, and that seventy-six per cent. (Solly) of all patients, good, bad, and indifferent, and eighty-nine per cent. of those in the first stage, that go there, are benefited. The climate is not adapted to every invalid. On that point there should be proper advice before going; nor does every patient do well after arrival. Climate of itself is not all. It needs wise use. On that question there should be suitable directions from men of experience on the spot.

Many persons feel the separation from accustomed friends and scenes and can find nothing good in

their new surroundings. The sun does not shine for such, nor is the glorious moonlight, as clear as crystal so that one can see to read print by it, anything but utter darkness to these. Some such are attacked with genuine homesickness, just as some, and not a few, die of it at the wars. Others cannot rise to the emergency. They prefer electric-light to sunshine, pavements to dry soil, clouds to blue sky. Their comparisons are drawn from artificial things. The rich coloring of the mountain side is likened to velvet; or a piece of lace is more wonderful than the columbine; the glide of a waltz is more graceful than the magnificent poise of an eagle; or the flight of a balloon on canvas more majestic more uplifting than the mountaintop. Others do not find God in Colorado, in the Rockies, as wonderful as across the seas, in the Engadine. For all such pity should be felt. "There is one glory of the sun and another glory of the moon, and another glory of the stars; for one star differeth from another star in glory." So there is the glory of the rocks and waves of the Maine coast, or of the miles upon miles of sands and beach of Cape Cod, or of the Presidential range of the White Mountains, with its "scratch on the face of Nature," or of the quiet peace of the Connecticut Valley, or of the Hudson, or of Lake George, or of the mighty torrent of Niagara, or of the Great Lakes. Each different from the other in glory, but each has its own crown. Who, then, shall deny to Colorado and to the Rockies their glory? It is unlike the others, but it is none the less good.

> Vain, all in vain, will outward sight be found.
> Unless the light of heart and mind abound.

If one will not be pleased with mountain scenery unless the tide comes rolling in, or if one must have the graceful elm and vistas and ha-ha fence in every landscape he had better not come to Colorado; or if he can walk no other street than Fifth Avenue; or if his eyes reach no higher than the Waldorf Astoria he will find no pleasure in our mighty mountain sides. But if one is really fond of expanse, and loves the violet and the purple, he cannot find them to better advantage than on our plains. Barren plains they are, to one accustomed to the undulating meadow, but how grand! how immense! how roomy! Can one hear the gentle turtle-dove cooing to his mate at dusk without feeling at peace with the world? or see the ridge in deep blue outline, cameo-like, clear up against the sky without holding his breath in awe? or listen to the sighing of the pines, or even to the absolute stillness of Nature without having some chord touched and his heart reply:

> Hast thou named all the birds without a gun?
> Loved the wood-rose, and left it on its stalk?

Then walk with Carter of Breckenridge, or Wallihan of Ray, and learn to enjoy yourself; or revel in the columbine, the penstamen, or the mariposa lily and consult with Leida Lansing. What mean the mighty seams and upheavals? The tremendous cañons, the majestic mountains, the beds of prehistoric fossils? Ah, who can say?

But an overwhelming objection is raised by many that if one gets well in Colorado he is obliged to stay there. To many this seems insurmountable. They would rather die, they say, and they will probably have their way. "I *will* drown, and nobody *shall* save me," is their motto. There is no use wasting time on such. But there are others who think that they would find it an exile, and they make a mountain out of a mole heap. To most of mankind it holds true, as said of Job, "Yea, all that a man hath will he give for his life," and recognizing the danger they are not so particular about the means of escape. When pulmonary tuberculosis exists one cannot rationally doubt the danger, and Colorado is by no means a questionable boon, even if regarded simply as a means of escape. Add to its other advantages its connection with the world, its accessibility, the comfort and ease of reaching it, the luxury of one's surroundings after one has reached there, the progress of its civilization in all departments, educational, civil, and religious, and it is thoroughly unreasonable to call it an exile. Colorado does not possess all that an older civilization affords, but she is by no means cut off from the rest of the world. Patti, Melba, Nordica, Ysaye, Wilhelmj, Sarasate, D'Albert, Paderewski, Damrosch, Bernhardt, Modjeska. Booth, Barrett, Mansfield, the Kendalls, and many others have found it to their advantage to look in upon her, and they have not gone away empty. Denver is called the "Queen City of the Plains," a title which she wears nobly and with dignity.

However, one is not always obliged to live there. Most patients find it wise to do so, for they recognize that like causes will produce like results and they hesitate to go through life with the sword of Damocles hanging over their heads. Having been saved from drowning once they are loth to jump back into the water. As has already been said, there is many an example to prove that persons with a tubercular tendency do live and work in the East; but experience has also shown that such a course is invariably attended by risk, and mistake means such dire results that one may well think twice before taking the chance. Most persons feel that it is better to err on the safe side, especially when that side is so attractive.

Of the numerous instances of those who are cured

and are living at the East again, let me cite two from my own experience:

A young lady came to Colorado a few years ago practically bedridden, with regard to whose tubercular condition, as shown by physical and laboratory test, there was no doubt, after three years, during which time she spent one summer in the East, she left and went abroad. Some months later she was reported as following the hounds and playing hockey in a most energetic fashion with the English girls who did not seem a bit stronger than she; and a year after that she wrote from the coast of New England of yachting, swimming, golfing, playing tennis, riding a wheel, and added: "My health is perfect. I believe I am as strong as I used to be, which seems wonderful to me."

The other subject, a clergyman, in middle life and of great activity, spent four months in Colorado, having been sent West by a leading diagnostician of New York. There was no question as to his condition. His gain was amazing. His search for health was a matter of the purest business. There was no deviation from the straight line. He ate well, slept well, got hours of fresh air; he allowed nothing to interfere with measures he esteemed to be for his good. His restoration to health was a duty he owed to his family and to God. At the end of four months he returned to his parish and his work (some three years ago) where he has remained ever since, in the enjoyment of complete physical vigor. Other cases could be cited, but these will show what is possible.

Does one want to take a vacation? Where can more of diversity or of interest be found? Here are the bracing mountain air bringing distant objects near to, the clear blue sky, the day after day of sunshine, the dry soil, the freedom from moisture the exhilaration, the buoyancy. As one grows older it is charming to be the boy again, to get up in the morning glad to see the sun, refreshed by a night's sleep, with a heart for any fate, ready to throw up his hat as of old. Here, too, are to be found the inducements to vigorous, out-of-door life, from riding the broncho and "rounding-up" with the cowboys, to hunting the bear, or mountain-lion, the elk, antelope, or deer, or throwing the line, or decoying the duck. If one's inclination is more gentle, and he wants to be soothed and to bask rather than exercise vigorously, there is Manitou with its sparkling table-water, to many more palatable than Apollinaris; or Glenwood with its baths and pool, where one can swim as the writer has done, in an acre of water, naturally warmed, while the snow is falling all about and the fountain close at hand has frozen into a pyramid of ice as high as a house. And there are hosts of other springs, all of which have their value. Does one want scenery? There are the mountains with their lofty peaks, their deep gorges, their cañons, their snow-capped summits, their parks, their ever varied and novel aspect. They are the Rocky Mountains, different from the usual, with a nobility all their own. Says a recent writer, after tabulating a long list of the peaks bearing a name, "Seventy-two peaks between 13,500 and 14,300 feet in height are unnamed, and so not showing in this list." Any one of these peaks, now unnamed, would be a fitting jewel to any range.

One is led to speak of the mountain passes our railroads climb. The train takes but a few cars and two engines. It is no easy ascent. The incline is quite perceptible. The panting, fuming, snorting engines are to be seen on the curve. First they go north, and soon they go south. They twist and turn and describe a letter S. One can touch the rocks, close at hand, or on the other side look over a precipice so steep that he becomes dizzy and closes his eyes. As the pass is climbed a glorious expanse of summit after summit stretches before the gaze. It is beyond description. At last the engines stop their panting; the toil and strain is over. The summit (10,856 ft.) is reached. Surely there can be nothing but cloudland above! But, no! There, still reaching thousands of feet into the sky is Ouray, with majestic dignity, proclaiming that he is yet a mighty mountain. The effect beggers description, and with bated breath the descent is made. Pages upon pages could by no means exhaust the subject. One scarcely knows where to stop.

Says one of the "Cape Cod Folks" with unusual force, in speaking of his people and locality: "Thar's suthin' about it sorter holts to 'em. They allus come a-driftin' back in some shape or other." This is peculiarly true of Colorado. The place and the climate possess a fascination for one who has experienced it, and he is apt to come "a-driftin' back."

But, to return. Take it for granted that it is wise for the tubercular patient, who would have died had he not come to Colorado, to remain in Colorado. Assume that he is well and that he is content to let well enough alone. The State of Colorado will furnish an adequate vent for all of his energies. He can live in a climate adapted to his condition, and at the same time do his full work in life. And not the invalid alone, but any man will find an ample outlet for his most active efforts, for all of his energies. This is no fairy tale, but good, solid fact.

The area of Colorado is 103,925 square miles, nearly 2¼ times that of the State of New York, or about 13 times that of the State of Massachusetts.

Colorado is not a one-resource State, not simply, nor principally, a silver-State, as many suppose. Her mountains teem with wealth; her plains and parks feed and shelter thousands of live stock; her valleys, under irrigation, reward the husbandman with cribs flowing over. At the present time the Klondike is the El Dorado. An importation of a few hundreds of thousands of gold from that region is heralded all over the land. But Cripple Creek can pour out her $1,500,000 of gold *per month*, and do it right along, and not be mentioned. The output of gold for the State in 1898 (some $25,000,000) justifies the rather boastful assertion of one of her daily papers: "Colorado has no rival in the production of gold within the limits of the United States." She has not found it profitable to push her silver industry, and yet her output of that precious metal is large. She mines, besides these, copper and lead, and coal, hard and soft (the area of the coal reserve has been likened to a cube whose sides are seven miles square), and iron fit for steel, in regard to which Mr. Andrew Carnegie is reported to have remarked, at a banquet recently that Pittsburgh was in a position to lay down iron in the markets of the world cheaper than any other locality in the United States with the exception of Colorado. She quarries the best of building stone of high crushing-strength, granite, sandstone of various colors, lava-stone, marble, and onyx. She is rich in flagging stone and paving stone. Here flow wells of oil and jets of natural gas. But it is in her agriculture and horticulture that she is most astonishing. It is quite within the memory of the writer when she was regarded as barren. "Do men gather grapes of thorns or figs of thistles?" one is wont to ask. And so one is incredulous that the land of the cactus, the sage-bush, or the red rock should produce anything but the cactus, or sage-brush, or the rock. No wonder then that the figures make the eyes stick out: 332 bushels of potatoes to the acre, one potato weighing 10½ pounds; oats, 7½ feet high, yielding 112½ bushels to the acre, and weighing 48 pounds per bushel; wheat giving 94 bushels to the acre are figures that make one see stars, even though these are the exceptional yields, and these figures are given on reliable authority. Wheat 27 bushels per acre, oats 40, barley 42, potatoes 132, alfalfa 4 tons; fruit $75 per acre, including young trees; full-bearing orchards $125 per acre; sugar-beets, yielding a factory value of $76.67 per acre. These averages, it is estimated, are fully maintained by the general yield in large areas of the several divisions. As amazing as all this seems, one feels as though it were a tale from the Arabian Nights, when he eats the delicious cantaloupe or muskmelon, or the crisp celery, or the Concord, big, round, juicy; or the peach, as big as a baseball, and as luscious as a Delaware, and is told that they come from Colorado. If one is in doubt, he has simply to ask his caterer.

But it is needless to pursue the subject further. In speaking of the Eastern country, Home, the Coloradoan formerly called it "God's country," in contradistinction to the barren plains and rugged mountain sides. Certainly it begins to look as though God had smiled upon this land, too, "thus inspiring man with confidence in his own resources, and facilitating the increase of his knowledge by encouraging that bold, inquisitive, and scientific spirit which is constantly advancing, and on which all future progress must depend."

As I have said before, Colorado offers ample opportunity for the most strenuous efforts of the most active. The plum is on the tree, but the tree has to be shaken. It is not every one who makes a winning, though the prize is there. Man has to struggle with the angel, but the fruits of victory are great and reward the effort. In Colorado a *man* can find opportunity, and would justly sing

"*Tecum vivere amem, tecum obeam libens.*"

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## THE OCCURRENCE OF CHEYNE-STOKES RESPIRATION DURING SLEEP A DIAGNOSTIC SYMPTOM IN THE EARLY STAGES OF INTERSTITIAL NEPHRITIS.

BY CHARLES O'DONOVAN, M.D.,
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THE occurrence of Cheyne-Stokes respiration in advanced stages of fatty heart and toward the end of the life of individuals suffering from one of the various forms of Bright's disease, as well as in other conditions of coma or allied states, has long been recognized. At such times it is merely one of many features marking the probability of an early fatal termination of the case, and attracting attention only as an interesting symptom of little diagnostic value. Experience has taught me to believe that this form of respiration may be one of the first symptoms observable in cases of chronic interstitial nephritis, giving warning of the sclerotic changes at a time when albumin is totally absent from the urine, or so infrequently present, or in so small quantity as to elude ready detection.

I have records of three cases each presenting this symptom at a time when no albumin could be detected in the urine; nor, in two of them, one a man and the other a woman, was there any other evidence of departure from perfect health. The third, a man, aged about sixty-five years, had well-marked arteriosclerosis with toughened radials. The first man was about fifty-four when Cheyne-

Stokes respiration was first noticed. He was a hard brain-worker, a great smoker, a total-abstainer from alcohol, a married man with a large family, of comfortable surroundings, and apparently in perfect health. He had never suffered from syphilis or any other venereal affection; his work kept him much in the open air; his appetite and digestion were excellent; he was rarely ailing, and then with trifling troubles. His urine was examined frequently, and contained neither albumin nor casts; his lungs were sound; his muscles were firm and strong; his heart was muscularly normal, but would occasionally intermit, dropping a beat at intervals of fifteen or twenty pulsations; otherwise it acted strongly and regularly. This irregularity was ascribed to over-use of tobacco, which he would not give up. He had been subject to severe attacks of headache ten to twenty years before I saw him, but these had been ascribed to neuralgia, and he was thought to have outgrown them. In the light of subsequent events it may be quite correct to accept them as the first symptoms of a prolonged course of nephritis. However that may be, at the time that I am now describing he showed no other symptom than the Cheyne-Stokes respiration, and that only at night. His wife, a woman of accurate observation, described it to me so truthfully that it could not be mistaken, as of nightly occurrence, at a time when he was in deep sleep. It was not always present, but appeared and disappeared without apparent cause, except that any overwork or worry would produce it, and in periods of relaxation it would be absent. This went on for fully seven years, until his death, the positive diagnosis of Bright's disease being made less than a year before the end. It may be interesting to note that, during the last six months of his life, he had several periods of a few days at a time when Cheyne-Stokes respiration was continuous during the day and night, unless relieved by opiates, and was particularly furious during the day.

The second case occurred in a woman who was under treatment for uterine trouble when her peculiar respiration was noticed, nocturnal only in her case also. She was about fifty-two years old and apparently perfectly healthy in every way, except for an intermittent discharge of pus from the cervix uteri. Her urine was examined several times without finding a trace of albumin; her heart and lungs were in every way normal, yet the Cheyne-Stokes respiration persisted night after night, especially after any fatigue or extra exertion. The case passed out of my hands after about six months of treatment and observation, but the patient died some three years later of Bright's disease, with uremic coma and convulsions.

In the third case, the man of seventy-two years, with atheromatous arteries and evident arteriosclerosis, the respiration was first noticed nearly four years before his death, and quite two years before albumin appeared in the urine. In his case, also, it was nocturnal entirely, and was noticed by his nurses, who had been instructed to be on the alert for such a manifestation. It occurred in greater frequency and with more force as his disease progressed, but never became evident in the daytime, as he died suddenly before any uremic symptoms had developed.

Small as is this group of cases they are of intense interest as they offer a suggestion that may assist in many instances in clearing up an obscure diagnosis. Many patients come into the hands of a physician with a train of symptoms that makes Bright's disease one of several possibilities. If albumin be not found by urinary analysis some other cause is assigned and most valuable time is lost when treatment would be most efficacious. When such subjects return months later with albumin present, the kidneys will have undergone such deterioration as to make it impossible to give any hope of a favorable result. It will be noticed that each of these patients presented the symptoms first at night exclusively, and even at that time only at irregular intervals. Careful observation over quite an extended period of time failed to show a single instance of its occurrence during the waking hours; when it appeared it was during sleep, otherwise calm and restful, and not influenced in any way, as far as could be discovered, by any particular posture or change of posture in the individual. The subjects were well advanced in years, but showed, in two instances, no other symptoms that would lead one to suspect chronic nephritis; the arteriosclerosis of the third pointed clearly in that direction.

The value of this symptom as an aid to diagnosis depends very much on the accuracy of observation of the nurse or attendant of the suspected individual, but well-marked Cheyne-Stokes respiration is so very peculiar that a few lessons should be enough to teach any one to recognize it. Any trained nurse must have come in contact with it, and should know it at once, and any attendant, even without hospital training, would know it after a little instruction. It is unnecessary to urge the importance of the recognition of chronic nephritis at as early date as possible, before the kidneys shall have become irreparably damaged. If it is possible to arrest the advance of the disease, it must be in its earliest stages, and anything that will help us to a prompt diagnosis, or even to a reasonable suspicion, of such a fatal malady is worthy of careful consideration and extended study.

It would be of great interest to know whether or not Cheyne-Stokes respiration is of frequent occurrence in the wards of large hospitals, where many cases of all kinds are grouped together, and where many opportunities are given for observation by night-nurses. From these patients could be eliminated such as would be likely to show this symptom in the usual course of the maladies from which they were suffering; the remainder should be carefully examined for evidences of nephritis, and the results of the examinations preserved for future reference, every effort being made to trace their subsequent histories. By collective investigation in this direction it is quite possible that a very material advance may be made in the early diagnosis of nephritis, at a time when such a diagnosis would be most valuable.

## CLINICAL MEMORANDUM.

### ESOPHAGOTOMY FOR THE EXTRACTION OF AN IMPACTED TOOTH-PLATE OF SIX YEARS AND FOUR MONTHS' STANDING.

BY G. G. EITEL, M.D.,
OF MINNEAPOLIS, MINN.

MISS A., aged twenty-seven, came to my office August 16, 1892, with the following history: Six years and four months previously she had been at a party, and while dancing, some passing incident caused her to laugh in such a manner as to throw her upper tooth-plate out of her mouth on to the floor, breaking it into two pieces. Being more mindful of her personal appearance than of the danger of wearing a broken plate, she wiped the pieces with her handkerchief and replaced them in her mouth, wearing them during the rest of the evening. It being her custom not to remove her plate on retiring, she found to her astonishment on arising the next morning that instead of having two fragments of plate in her mouth she had but one, and she immediately realized that the lost fragment during sleep had passed into the esophagus. As it gave her no discomfort she paid but little attention to it, not even mentioning the circumstance to any one. About one year later when eating rather hurriedly and swallowing a piece of beef that had not been properly masticated, she discovered that it would not pass into the stomach, but was at once regurgitated, and from this time on she noticed the presence of an obstruction. She then consulted a physician, who, according to her story, advised her to leave it alone and pay no attention to it as long as she experienced so little discomfort. Subsequently the obstruction became so marked that she could not swallow any solid food whatever, and for a number of months she was sustained on liquids, mainly milk, many hours being required to swallow a teacupful of milk or beef-tea.

Fortunately the obstruction was low enough down so that quite a large quantity of fluid could be taken into the esophagus above the obstruction and allowed to pass as it might into the stomach. She became so accustomed to having fluid in this reservoir that she seldom went without it during the daytime.

The first thing to attract my attention when she consulted me was her general emaciation and cyanosis with dyspnea. An examination with an esophageal sound revealed an obstruction about two inches below the upper border of the sternum. From the click produced by the sound I was satisfied that the lost fragment of the plate was being struck, and that it was the cause of the obstruction. I made an attempt to grasp the plate with forceps designed for such purposes, but could not reach it. Her physical condition being such as to demand prompt relief, I at once sent her to the Northwestern Hospital, and with the assistance of Drs. Dunsmoor, C. T. Cook, and U. G. Williams performed an external esophagotomy.

The patient being anesthetized with chloroform, was placed on a table, her head somewhat elevated and her neck flexed in the direction of the right shoulder. The field of operation was brought as nearly as possible into an aseptic condition and an incision through the skin and platisma muscle was made on the left side, beginning at about the middle of the neck and extending along the anterior border of the sternocleidomastoid muscle down to the clavicle. This incision was gradually deepened, the anterior jugular vein clamped above and below and severed, and the sternocleidomastoid and omohyoid muscles, the common carotid artery, internal jugular vein, and the trunk of the pneumogastric nerve were drawn back with blunt retractors by my assistants. As the clavicle was approached due care was exercised not to injure the subclavian vein and arch of the aorta. A large-sized bulbed esophageal sound was introduced into the esophagus down to the obstruction, and an incision about one inch in length made into the lumen of the esophagus directly upon the bulb. With the point of the right index-finger I carefully dilated the upper part of the constriction and found a place where I could secure a hold on the plate with a small sequestrum forceps. It was with some difficulty dislodged and extracted.

I then made an attempt to pass an esophageal bougie into the stomach, but without success, as there was an almost complete stricture some distance below the point where the plate had been lodged. I finally succeeded in passing the point of a slender uterine dilator, by means of which a sufficient opening was made so that a large-sized stomach tube could be easily passed. The upper part of the incision was sutured, but on account of the vomiting during and after the operation it was impossible to prevent infection of the extensive wound, which finally healed entirely by the process of granulation. There was considerable discharge from the wound. Her temperature for a few days reached 101° F., and then gradually receded to normal.

The patient was fed with predigested food, per rectum, for more than a week, after which time milk and beef-tea were introduced into the stomach once a day through a tube. The rectal feeding was continued one week longer. She gained rapidly in flesh and strength. At

the end of four weeks the wound had closed, leaving quite a wide and ugly scar. This was completely removed by injecting a two-per-cent. solution of cocain along the skin margins, and after waiting about five minutes denuding the edges of the skin with a sharp scalpel and dissecting it for about an inch and a half on either side, the margins then being brought into apposition by means of fine silk stitches placed close together. A large-sized esophageal bougie was passed once a week for about two months.

There seemed to be but little difficulty in respiration after the plate had been removed from the esophagus, and no hindrance to deglutition at any time after the fistula had closed. The patient began to enjoy excellent health almost immediately after the operation, which is still her good fortune, almost six years having passed since that time.

## MEDICAL PROGRESS.

***A New Process of Skin-Grafting.***—WIGGINS (*St. Louis Clinique*, July, 1899) has attained complete success in skin-grafting by scraping epidermic cells from the sole of the foot. The foot is prepared by a thorough scrubbing, to remove as far as possible the outer layer of epidermis which must of necessity be alive with micro-organisms. This is followed by bathing in strong bichlorid solution; the foot is then covered with moist boracic-acid dressings covered with rubber tissue, which serves, by reason of heat and moisture, to loosen the deeper and more vitalized layer of cells. After twelve hours the dressing is removed and the surface thoroughly scaped with a dull knife. The cell mass thus obtained is placed in a mortar which in turn is placed in a water bath at a temperature of 110° to 115° F. and stirred until thoroughly desiccated. This procedure triturates and further separates particles, and divests them of all moisture, so that they will better adhere to the moist surface of the ulcer. It is readily understood that in a certain space where by the ordinary method there is but one graft, by this method there will be perhaps 1000, and on account of the minuteness of the cell or cells, the chance of their living is increased. The dangers which a graft is likely to encounter are: (1) excessive secretion which will wash it from its anchorage, and (2) the formation of exudate between the graft and the granulating surface which will prevent union and result in the death of the graft. These dangers may be avoided in two ways. One may take a piece of ordinary rubber tissue, perforate it, leaving the holes at intervals of one-eighth of an inch, and cover with it the entire surface. Through these holes islands of granulation tissue will protrude about one-quarter line above the surface, each independent of its fellow. The intermediate pressure serves to render the projecting points more vascular, and thus facilitates union with the grafts.

Another method consists in marking off a space of granulating surface around the entire circumference one-half to one-quarter of an inch wide and sowing this field with desiccated epithelial cells, over which strips of rubber tissue are laid, extending about one-half line beyond the margin of implantation. The center of the ulceration is then filled with strips of gauze and dressings are applied in the usual manner. If the surface to be covered is less than two inches wide, these special methods of procedure are not necessary and the epidermic cells can be spread completely over the granulating area. The results which Wiggins has obtained have been most satisfactory. An ulcer one inch by one and one-half inches may be entirely covered by a thin film of organized tissue within twenty-four hours, and within ten days it may be impossible to discriminate between the old and the new structures.

***A New Method of Treating Echinococcus.***—GARRE (*Centralbl. für Chir.*, July 15, 1899) mentions three cases of echinococcus of the liver in which he followed the method of Bobrow, scraping out aseptically the contents of the cysts, closing them with a continuous suture, and returning them to the abdominal cavity. The first operation was followed by the formation of a fistula but inside of a month the patient recovered so far as to be able to walk about and to return home. In the second case an enormous cyst of the left lobe of the liver was partially resected and partially sutured and dropped back. Recovery in this instance was prompt, as it was in the third case in which a cyst the size of a man's fist was adherent to the colon, omentum, and liver. A part of the cyst-wall was resected and the remainder sutured. These cases show the possibility of obtaining primary union of echinococcus cavities after the contents have been removed. The chief objection to this method, according to the writer, is the danger of leaving behind some of the infectious material if the cyst is exposed with difficulty or if daughter cysts are present. In the fourth case Garre punctured through the rectum an adherent cyst in the pelvis and injected into it a solution of corrosive sublimate. One year later no trace of the tumor was to be found. This method of treatment is only recommended in case the adhesions completely shut off the peritoneal cavity.

***Malaria of a Pernicious Form Cured by Hydrotherapy after the Failure of Treatment by Quinin.***—LEMOINE and VEUILLOT (*Le Nord Med.*, July 15, 1899) relate the history of a patient aged thirty-one years, who suffered from malaria of an aggravated type. Chills and fever occurred irregularly and were only temporarily and partially relieved by the administration of from 30 to 60 grains of the sulphate of quinin per day. Hypodermic injections of quinin and of cinchonidia were equally unsuccessful. Things had gone on in this manner for three months and the patient had lost all appetite and vomited almost all food. The medicine was discontinued and the patient was subjected daily to treatment by a stream of cold water directed upon the chest, arms, back, and legs. At first the douche was given for only ten seconds, but the time was gradually increased until it lasted a minute. The temperature of the water was 45° F. The chills and fever disappeared almost immediately, the general condition began at once to improve, and in a short time the patient was entirely well.

***Paravaginal Hematoma.***—VOITURIEZ (*Centralbl. für Chir.*, July 15, 1899) describes the paravaginal space as

lying between the outside layer of the tunica vaginalis of the testicle and the inner layer of the tunica fibrosa. This paravaginal space may be the seat of a hematoma as has long been known. A predisposing cause is the presence of an old varicocele or hydrocele. The immediate cause is usually a trauma, such as a blow or a fall, although a hematoma may be caused by the needle used to tap a hydrocele. Paravaginal hematomata have usually an irregular, oblong shape. They vary in size and may be as large as two fists. In vaginal hematoma the testicle and clotted blood form one mass, but in paravaginal hematoma they can usually be distinguished one from the other by palpation. Spontaneous cure is not likely. Usually the blood remains encapsulated and the surrounding fascial layers thicken; or infection may take place with suppuration. If the patient is seen in the early stage, an incision should be made to evacuate the blood-clots and the wound should be treated by pressure and a drain until it heals. If the hematoma has existed for a long time and its walls are thick, they should be resected as far as possible. If a hydrocele is also present this should be treated by the open method.

***A New Method of Expelling the Placenta.***—BUDBERG (*Centralbl. für Gyn.*, July 29, 1899) recommends the following modification of Credé's method of expelling of the placenta. The patient's attention should be distracted in order to secure relaxation of the abdominal muscles. After slight rubbing movements, the hand of the obstetrician sinks gradually deeper until it grasps the fundus as much on the posterior wall as possible, the thumb being directed forward. With the other hand the lower portion of the uterus is seized in such a manner that the ulnar edge of the palm lies against the symphysis. Expression should begin with a pain and increase during its continuance. The two hands should be pressed together, harder and harder, as the pain increases and as it passes over the pressure should be gradually lessened and not suddenly removed, even though the placenta is expelled in the meantime. With the upper hand rubbing movements are to be made as they were made at first. It is claimed for this method of expression that it does not move the uterus out of its normal position, but rather fixes it in that position, so that there is no danger of tearing the ligaments or the peritoneum of Douglas' pouch; nor is inversion of the uterus possible. This method of expression also empties the urinary bladder.

***A Self-Retaining Drain for Empyema.***—FELKL (*Prager Med. Wock.*, July 6, 1899) describes the use of a special form of drain in empyema. He took a short glass tube, flattened it slightly, and at a point where the ribs would press upon it, indented its sides, thereby making a shallow groove. A rubber tube of the same diameter as the glass tube was drawn tightly over it. The groove was plainly shown through the rubber. The diameter of the glass tube was 8 [mm. (⅓ inch) and the length of the rubber tube 35 cm. (14 inches). The portion which projected inside the chest was furnished with numerous fenestra. The patient was not inconvenienced by the slight pressure of the drain between the ribs and owing to the accurate closure, drainage was perfect and in less than two months the wound had entirely healed. No irrigation was employed.

***Slipping of the Intraperitoneal Ligature.***—SUTTON (*Buffalo Med. Jour.*, August, 1899) says that the slipping of a ligature placed upon an exposed vessel is due either to careless application or to giving way of the knot. The latter possibility may be ignored when silk is employed. A catgut knot in the peritoneal cavity may slip. For this reason when several blood-vessels are ligated together, he always uses silk. No matter how carefully tied, a ligature may slip off a mass of tissue, or, more properly speaking, part of the constricted mass, especially that which contains the artery, may retract from the ligature and so give rise to hemorrhage. In order to avoid this unfortunate accident, it is necessary to leave a sufficient stump for the ligature and before the ligature is applied a groove of crushed tissue should be made in the stump by means of a pair of heavy clamps. When this is done there is no danger of the ligature slipping off. Tying tissue *en masse* is not surgical and endeavors should be made in all cases to tie the arteries themselves. Doyen's crusher may serve a useful purpose in all cases where it is not possible to apply a ligature with safety; but one ought not to rely on it to the exclusion of sound surgical methods.

***The Micro-organism of Scarlet Fever.*** — CLASS (*The Sanitarian*, August, 1899) has found, as he believes, the micro-organism of scarlet fever. It is a diplococcus resembling, as ordinarily seen on freshly made slides, a large gonococcus. The size varies somewhat but it is always considerably larger than the ordinary pus-microbe. Usually these cocci occur in bunches of from ten to fifty. Streptococcic forms are occasionally met with. The organism has no capsule. It does not show any spores, has no flagellæ, and under examination by the hanging-drop it does not show any independent motion. It is decolorized by Gram's method although not to the same extent as the gonococcus. The germ described has been cultivated from the scales in about thirty typical cases of scarlatina. It has also been found in the angina of scarlatina, and in cases of angina occurring in persons exposed to scarlet fever in whom no eruption shows. The writer also found it in the throats of children in a family, one member of which had scarlatina although the children were well at the time the culture was made. Subsequently these children developed scarlatina and the germ was cultivated from their scales. Class hesitates to say that this is the specific germ of scarlet fever. He is making further experiments along the same lines. A culture of the micro-organism injected into the ear veins of swine has produced a disease closely resembling scarlatina in the human being. From the blood and scales of the inoculated animal the same organism has been isolated. The germ will not grow in agar-agar nor in bouillon. Class used a glycerin agar-agar to which was added a thin paste containing five-per-cent. of dried and sifted garden earth mixed with bouillon and boiled.

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SATURDAY, SEPTEMBER 16, 1899.


### SIMPLE ROTATION OF THE BODY FOR VOLVULUS.

VOLVULUS is usually so serious a condition, frequently requiring operative interference, that a heroic method of treating patients who have symptoms of the condition seems well worth noting. Dr. G. H. Hunter in the London *Lancet* for August 19, 1899, reports four cases in which the simple rotation of the body of the patient around its long axis while in the horizontal position brought almost immediate relief of the symptoms, especially of the pain, and eventual recovery without further treatment.

Of course there always remains a certain amount of doubt as to the real lesion that has existed in the intestines of patients who recover without laparotomy. Dr. Hunter's cases as described, however, presented symptoms that would ordinarily be considered amply sufficient to justify his diagnosis of volvulus, and if it were not volvulus, then a method of treatment that will relieve pain in certain obscure abdominal conditions as promptly and as completely as this deserves to be given a thorough trial.

The patients are asked first to gently make a half turn to the right or to the left, keeping themselves as far as possible in the horizontal position. If the pain is greatly increased by this half turn, then the patients are asked to turn the other way until three or four complete revolutions of the body are made. The relief of pain is almost immediate and is usually appreciated after the first turn. Dr. Hunter suggests that the method may be of use as an aid to diagnosis in suspected cases of volvulus. If a half turn of the patient to the right or left causes increase of pain it may be concluded that some twisting of the intestines with consequent congestion and cramp is the explanation of the abdominal symptoms complained of, the rotation making the condition worse.

### LEGAL REGULATION OF BARBERS.

IT is a well-known fact that certain very troublesome, though fortunately not very serious skin affections are easily and very commonly acquired in barber-shops. The number of chancres of the face and lips reported every year as acquired during the shaving process, is, especially in European countries where syphilis is more general, continually on the increase. Last year we called attention to the fact that in Austria and a little later in Germany, a law had been passed requiring barbers to know the general features of asepsis and making compulsory its enforcement in the regular barber-shops. Other countries followed the good example thus set, and now we note with pleasure that the Province of Quebec has passed a law, which goes into effect almost immediately, which promises to effectually limit the possibilities of the spread of infection through the medium of the barber-shop. A noteworthy feature is that all barbers before they take up the practice of their trade must present the certificate of a physician in good standing that they are not suffering from any contagious disease. Besides this they must pass an examination showing that they possess a knowledge of the proper method of disinfecting their implements and sterilizing their towels and hands.

We can readily understand that such a law, unless hedged in by most careful precautions, may be abused by labor unions for purposes not conducive to public utility. The principle involved in the law, however, is so thoroughly commendable that even this risk may be calmly faced. It is besides in perfect

accord with the modern advances in preventive medicine. Patrons will submit to a barber's manipulations with a feeling of greater security when they realize that intelligent efforts are made to keep implements and towels and hands reasonably sterile. Many who now hesitate to use public barber-shops will be given confidence in them, so that the extra expense involved in the observance of the law will be more than repaid in the ordinary course of business.

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### TRUSTS AND MEDICAL CHARITY.

THE Lord Mayor of London called attention in a recent letter to the English press on behalf of the Metropolitan Hospital Fund to a matter which has already been publicly mentioned in England more than once. It is the loss to charity and especially to hospital funds generally of many generous contributions, because many of the old and wealthy firms have been turned into limited liability concerns which have no power to contribute from their corporate income to purposes of charity. The London *Lancet* says with regard to the matter: "It is of course no part of the duty of the directors of such companies to propose that any part of the dividends should be set aside for charitable purposes, but it is possible and even probable that if the Lord Mayor should address a letter to such companies asking for subscriptions to the Hospital Fund the matter would be discussed at the meetings of the directors and a donation granted."

We have not as yet heard any complaints in this regard in this country. It seems probable, however, that in the present fad for the organization of manufacturing concerns into trusts in order to reduce the fixed charges, that one of the fixed charges that will suffer from the new economy will be the contributions to hospitals. Proverbially corporations have no souls and the larger they are the more completely material do they seem to become. Let us hope that in the reorganization ensuing in so many large interests the claims of the hospitals which do so much for their workmen will not be forgotten. More than this let us hope that the managers of public institutions will at the first sign of a falling off in contributions as a consequence of trusts and consolidations make such representations as our London contemporary suggested to the proper authorities and so prevent their efficiency from being even temporarily impaired by an oversight.

### NEW AIDS IN THE EARLY DIAGNOSIS OF TUBERCULOSIS OF THE LUNGS.

THE interest aroused in everything connected with tuberculous disease by medical and popular movements for the treatment of the affection in sanatoria and by the recent Congress on Tuberculosis at Berlin has only made more emphatically clear certain old and well-known points with regard to the disease. It is now universally conceded that there is no pharmaceutical specific for tuberculosis and that even climate and altitude, for so long supposed to have a certain specific curative effect, are only especially favorable elements in the general hygienic conditions that constitute the best treatment up to date. It has, however, become clearer than ever that treatment to be successful (and it can be completely successful in opportune circumstances) must be begun early. Early diagnosis is the all-important factor for the cure of pulmonary tuberculosis. It is much more essential for the patient than any studied dietary or régime in ideal conditions of light and air that his physician detect the disease at its very outset. Every aid to diagnosis that promises even a modicum of assistance in the delicate question of the detection of an incipient tuberculous process in the lungs must be familiar to the conscientious physician who takes on himself the responsibility for these cases. It is no longer enough to be able to apply with advantage the ordinary methods of physical diagnosis or even to detect bacilli in the sputum. There are certain other aids that it would seem every physician who sees many of these cases should be familiar with.

Two of them have been brought into such prominence recently that it seems advisable to call special attention to them once more. At the recent meeting of the American Climatological Association in New York City an animated discussion brought out the fact that laryngologists believe that there is often present in incipient tuberculosis a condition of the larynx which, while not pathognomonic of the disease, always should arouse active suspicion and lead to careful examination of the lungs. This is not a tuberculous laryngitis, but is an anemic condition of the mucous membrane of the larynx in which the membrane itself seems thinned and almost atrophic, and blood-vessels stand out prominently in it. Dr. Lenzman, in the June number of the *Therapeutische Monatshefte*,

calls attention to this characteristic pale appearance of the laryngeal mucous membrane, and says that it may also sometimes be noted on the soft palate and even on the hard palate. The anemia of the larynx sometimes gives rise to a dry, irritative cough. It is the cough that patients come to be treated for, and it is possible that the laryngeal appearance might be considered sufficient to account for it, especially as it is not a productive cough. On the contrary, the laryngeal condition seems to be a reflex nervous interference with the blood-supply of the larynx consequent upon the pulmonary affection and it is the pulmonary condition that demands attention.

At the same meeting of the American Climatological Association Dr. Francis H. Williams of Boston called attention to the fact that the Röntgen rays may be of great service in revealing incipient consolidation at the apices of the lungs before it is demonstrable by the ordinary physical signs. He pointed out also that the excursion of the diaphragm on the affected side is usually less than that on the sound side very early in the disease. Dr. Cabot of Boston, in the issue of the MEDICAL NEWS for April 15, 1899, called attention to the utility of Litten's phenomenon in revealing this same impaired motion of the diaphragm on the affected side. The excursion of the diaphragm may be seen in many cases by simple inspection to be distinctly lessened without the expensive apparatus necessary for the X-rays.

These laryngeal and diaphragmatic phenomena have not been called especially to the attention of the general profession before, and it would seem as though they may prove of distinct service in confirming other suspicious signs in the early stages of pulmonary tuberculosis when diagnosis is often so very difficult and yet so very important.

## ECHOES AND NEWS.

***Dr. James Campbell*** of Hartford has resigned the professorship of obstetrics in the Yale Medical School.

***The Volta and Galvani Historical Relics.***—It is now definitely settled that the fire at the Electrical Exhibition at Coma in Italy entirely destroyed most of the relics of the work of these, the original electricians. Only Volta's pile and some letters and manuscripts remain of the very interesting collection that was sent to the exhibition.

***Tri-State Medical Society of Alabama, Georgia, and Tennessee.***—The eleventh annual meeting of the Tri-State Medical Society will be held at Chattanooga, October 24, 25, and 26, 1899. Those desiring to read papers should send titles to the Secretary, Frank Tresler Smith, M.D., Chattanooga. The indications are that the meeting will be large and successful.

***Death of Karl du Prel.*** — The death is announced of Karl du Prel, the German spiritualist, who up to 1872 was a captain in the army, and who retired in that year to devote himself to literature. He wrote many books in behalf of mysticism, and had many savage controversies with medical men, who had no difficulty in showing that his delusions were due chiefly to his ignorance of mental pathology.

***Many Soldiers Ill.*** — The New York *Evening Post* of September 9th states that in General MacArthur's Division in the Philippines 36 per cent. of the officers, and 25½ per cent. of the enlisted men are ill. This includes the sick in quarters and those sent home. Eleven per cent. of the men sick in quarters are suffering from dysentery and malarial fevers. The *Post* vouches for the accuracy of this statement which it declares the censor has refused to telegraph.

***Recovery from the Bite of a Gila Monster.***—A snake charmer at Coney Island not long ago was bitten on the hand by a Gila monster. The bite of the creature is sometimes fatal and always serious. The immediate application of a tight bandage around the wrist prevented the absorption of the poison into the general circulation, while suction by the patient himself, and free bleeding, aided in getting rid of it. The patient recovered without any very serious symptoms and without sequelæ.

***Christian Science Held to Be Legal.*** — Attorney-General Akin of Illinois rendered an opinion on September 9th to the effect that the Medical Practice act of 1899 does not prohibit the treatment of disease by mental or spiritual methods by Christian Scientists or others, when no medicine is used, and that when a person dies under such treatment it is not an offense under the criminal code of Illinois. Attorney-General Akin is not the first legal luminary who has not been able to separate medicine and pseudo-theology.

***Italy's Plague Serum.***—For three years the Institute of Hygiene at Messina, Sicily, has paid, under the direction of Professor Terin, much attention to the study of the plague bacillus and to the production of a special serum. Professor Terin and his colleagues have great faith in the qualities of the serum, and two of his assistants, Drs. Bandi and Stagnitti, have gone to Oporto for the purpose of using it in that city. The authorities of the Messina institute believe that their serum and the vaccine produced in their laboratories will give results superior to the same preparations furnished in France and Germany.

***Hospital Corps Men Needed.*** — The work of providing hospital corps men and trained nurses for the enlarged

Philippine army continues to give Surgeon-General Sternberg and his colleagues some concern. According to the calculations of the medical officers at the War Department, it will be necessary to have an aggregate of 2000 hospital corps men ready for service when the fall campaign opens. At this time nearly 1000 of these remain to be enlisted. Special efforts are being made to secure good men for this service, but the recruiting is progressing very slowly, owing to the desire to enlist in the volunteer infantry regiments.

***Memorial to Plague Martyr.***—We noted some months ago the death of Surgeon-Major Evans of the British India Military Medical Service from plague contracted while performing autopsies on the bodies of victims of the bubonic plague. It is now announced that the fund raised to commemorate his untimely death will suffice not only to erect a suitable tablet, which was the original intention of the promoters of the fund, but will also be sufficient to establish a small prize in pathology at the University of Calcutta. A fitting tribute this to a brave man, and one calculated to do good by holding up his example for emulation while perpetuating his memory.

***Hours of Sunshine per Year.***—According to the *Scientific American* these are the number of hours of sunshine annually in various European countries as given by the French Meteorological Bureau at Paris: Spain, 3000; Italy, 2700; France, 2600; Germany, 1700, and England but 1400. The average fall of rain in the latter country is greater than that in any other European country. In the northern part and on the high plateaus of Scotland about 351 inches of rain fall each year, and London is said to average 178 rainy days in the year, and fully ten times the quantity of rain that falls on Paris.

***St. Louis' New City Hospital.***—The new hospital in St. Louis for which ground has just been broken will when completed cost several million dollars, and will be perhaps the most complete and perfect institution of the kind in the world. The pavilion plan has been adopted and the buildings first to be put up are the central administration building and a few of the surrounding pavilions. It will be some years before all the buildings called for by the plans will be constructed. A clause in the city charter permits one per cent. of all the city revenue to be used for this purpose. This represents at present an annual allowance of $225,000. The plans were drawn after a study of the best hospitals of Europe and America.

***A "Power" Brake for Trolley-Cars.*** — The New York State Railway Commission is carrying out a series of tests on Lenox avenue, this city, to determine the efficiency of certain safety brakes. The number of serious accidents, many of them fatal, that take place on street-car lines throughout the country makes the employment of some safety device for the rapid bringing of cars to a stop, an absolute necessity. Hundreds of lives would be saved every year if there was some means of stopping a street-car within its own length. Modern electric cars are so heavy, and are run so rapidly, and carry so many passengers, that it is preposterous to expect an ordinary hand-brake to do effective service on crowded city streets. The present move of the State Railroad Commissioners deserves every encouragement, and we hope that it will result in the enforcement of some regulation requiring the equipment of all street cars with an effective form of power brake.

***The Yellow-Fever Situation.***—The present conditions of the outbreak of yellow fever are more serious than when we reviewed the subject last week. Up to the beginning of the week 200 cases of yellow fever had been reported at Key West and about ten new cases a day were occurring. A case of yellow fever is reported from Port Tampa, Fla., and the report is confirmed by the autopsy. One case of yellow fever, but that of a malignant type, occurred at Jackson, in Mississippi. Other towns in Mississippi are beginning to quarantine strictly against infected places. At New Orleans no new cases have been reported, and the fever seems well in hand. Four cases of yellow fever were at quarantine in New York City at the beginning of the week. They had been brought North on the steamer "Lampasas" from Key West. One of the cases proved fatal on Monday night, but it is expected as we go to press that the others will recover. The New York City quarantine authorities are carefully watching all passengers from Key West, and are confident that they will keep yellow-fever patients from landing at this port.

***Barbarism and Civilization.*** — Two French officers in Africa have been guilty of conduct which well deserves the attention of the alienist and the student of human evolution. Captains Voulet and Chanoine have been charged with barbarous cruelties to the natives in the French Soudan. For instance, a native was beheaded because he declared he did not knew a road about which he was being questioned. Voulet, it is said, captured eighty natives, among whom he killed twenty women and children. Chanoine burned a village and captured twenty of its inhabitants, ten of whom he killed, placing their heads on pickets. It may be said that such conduct is to be expected of a people which has just for a second time convicted of treason a perfectly innocent man. But for an explanation we must go deeper than this. It is known that English officers, who were considered gentlemen of the finest instincts while at home, committed the most hideous barbarities while in Africa. Dr. Peters, the German explorer, has been while in Africa guilty of unspeakable acts. It appears that it takes many centuries for man to advance from savagery to civilization, while the relapse is practically instantaneous.

***Protective Inoculation for Plague.***—Of special interest, owing to the present plague situation, is Captain Leumann's report on preventive inoculations against plague at Hubli in India during the past year. Captain Leumann, who was detailed for the purpose of investigating the effects of Haffkine's serum, was very well satisfied with the

results. One of the most interesting things in his report is the fact that those twice inoculated with the serum were much more surely protected from plague than those but once inoculated. The statistics he gives are very striking. The disease was not of a mild type, for in one week the mortality stood among those who held aloof from inoculation as high as 657 per 1000. The town could not be evacuated, and therefore, concurrently with disinfection, unroofing of houses, and segregation, the inoculations were vigorously applied, so much so that in a short time more than 24,000 were inoculated twice, and 10,000 once. The results are remarkable, indicating a protection of 85 per cent. on the whole epidemic, with a figure of from 90 to nearly 100 per cent. for the greater part of the time. The twice inoculated show a record just over 10 per cent. better than the once inoculated.

*A Final Word about the Kissing-Bug.*—After the excitement and exaggeration indulged in with regard to the so-called "kissing-bug," it seems well to be prepared for any future visitations of the troublesome insect by definite scientific knowledge. This is all the more interesting as it serves as an explanation of certain severe insect bites usually attributed to spiders. At the recent meeting of the American Association for the Advancement of Science Dr. L. O. Howard, United States Entomologist, treated the subject very interestingly and practically. His paper, a brief abstract from which we clip from the *Scientific American* for September 9, 1899, was entitled "On Some Heteropterous Insects Formerly Responsible for Spider-bite Stories." He said that while, after several years of investigation, he had failed to verify by proof even a single case of serious or fatal spider-bite, he found that several bugs belonging to the *Reduviidæ* do inflict painful wounds. He described particularly the *Reduvius personatus*, an imported European species, the *Melanolestes picipes*, and *M. abdominalis*, allied native species, and two varieties of *Rahasus*, and several kinds of *Conorhinus*, all of which occur in this country, and whose bites have often been attributed to spiders. He regarded the "kissing-bug" craze as phenomenal, and largely due to stories told by the newspapers, based upon a comparatively small number of actual cases. It reminded him of the tarantula frenzy that was once epidemic in Europe, with remarkable psychological manifestations, which had thus been reproduced this year in a mild form. Curious instances were told of nervous and even hysterical symptoms that had been produced by simple mosquito bites. The paper was accompanied by an exhibition of specimens and drawings.

*The Plague in Portugal.*—Up to the end of the second week of September about sixty cases of plague with about one-third that number of deaths had occurred in Portugal. A new case is reported nearly every day. The Portuguese authorities seem to be doing their best to prevent the further spread of the disease. Eight battalions of infantry are patrolling the country in the neighborhood of Oporto, and are supposed to absolutely prevent ingress to or egress from the city except with proper precautions. Dr. Vincente, who was sent by the Spanish Government from Madrid to investigate the plague at Oporto, reports that the prevalent type of the disease is the pneumonic form, and that he considered the epidemic a serious one. This form of the disease is said to be especially contagious. The *British Medical Journal* thus sums up the situation in Portugal: "The disease seems to spread. In one of the Oporto jails a prisoner died of plague. Suspected cases have occurred at Lobrigos, Regoa, San Samedi, and at Tambuija, and Atalaya, north of Santarem, on the railway between Oporto and Lisbon. The populace in Oporto are hiding their sick, not only the plague stricken, but persons suffering from ordinary illness. This is proved by the attendance at the public hospital, where the daily number of out-patients has fallen off. At the Misericordia Hospital the out-patients are only 48 daily, in place of 220. The poor believe that once sent to the hospital on suspicion of having plague that they are straightway poisoned. The only official means of exit from Oporto is now by sea, but it would seem, however, that plague has infected the country beyond the cordon, so that, as so often happens, the soldiers forming the cordon may, as the infected zone is included, become the means of spreading the disease.

*The Plague Situation.*—Generally the plague is milder everywhere than earlier in the summer. It is to be noted, however, that it has often been remarked before, that toward the end of the summer there is very little of the disease, and then an outbreak occurs in infected spots when cold weather sets in. At Alexandria not more than two or three cases a week are being reported. In Mauritius, during the last week in August, there was a recrudescence of the disease and some forty cases and over thirty deaths occurred. At Hong Kong, according to official statistics for the week ending August 27th, there were fifteen new cases and fifteen deaths. It is officially confirmed that plague exist at Nieuchwang in China. It has been found very hard to understand how the plague succeeded in reaching Nieuchwang which is 1500 miles from the nearest infected port in China, Amoy, and it is feared that other places along the coast may prove to have the disease. The plague situation in Russia is the cause of no little uneasiness in Russia itself, and also to European countries having commercial relations with her. The suspicious disease which recently broke out at the village of Kolobooka, in the Province of Astrakhan, seems to be plague of the pneumonic form. A large number of deaths are recorded, and the matter is considered so important that the Duke of Oldenburg, the President of the Committee for Combating the Propagation of Plague, has gone to Kolobooka, accompanied by a number of medical men. The Roumanian authorities have, in consequence of the news from Russia, closed the Russo-Roumanian frontier, and passengers are allowed to pass only at four of the frontier towns. The Russians have placed military observation posts all along the infected border, and persons from Astrakhan will not be permitted to cross the frontier at all. All goods are being disinfected, and a ten days' quarantine is, in addition, insisted upon.

## MEDICAL MATTERS IN NEW YORK.

CREMATION BY LIQUID AIR—TEMPERATURE DURING THE SUMMER—TO EDUCATE THE BLIND AND THE DEAF—LEPER DIES ON BLACKWELL'S ISLAND—VACCINATION OF SCHOOL CHILDREN—COMPTROLLER COLER AND THE CHARITIES.

PLANS for a large liquid air crematory to be established at the Nyack Rural Cemetery, New York, have been prepared. The work will commence at once under the management of Dr. Emmons, President of the American Liquid Air Company, of New York.

The temperature of New York, on the average, has been quite low during the past summer, and the weather has generally been delightful. Other places have fared much worse. London has passed through the hottest summer since its meteorological bureau was established twenty-seven years ago. Chicago has of late been suffering intensely, the thermometer having at times reached 102° F. in the shade.

Richard Young, Esq., a member of the Brooklyn School Board, has proposed to establish classes in the public schools for the education of blind and deaf children. He considers that as there are no schools in Brooklyn for the education of blind children, a part of the public funds should be devoted to this purpose. Moreover, children who, while they are not blind, have defective eye sight, and are for that reason kept out of school would also be benefited by the proposed classes.

Ling Jug, a leprous Chinaman, died on September 7th in a hut on Blackwell's Island, in which he had lived for two years past with another leper. In 1897 Ling Jug and three other Chinamen were isolated on North Brother's Island. Ling and the companion who was with him at his death got away in a rowboat but were captured and sent to Bellevue Hospital, whence they were sent to Blackwell's Island. This case recalls that of Joe Evans, the leper, who served the twenty-four internes in the "Doctors' Hall" at Charity Hospital. He sold them cigarettes, stamps, etc., prepared their bichlorid baths, and was in constant attendance upon them. His case was one of leprosy well developed. His propinquity seems to have hurt no one.

Health Board President Murphy's instructions that the school law concerning vaccination must be strictly enforced, is bearing fruit. Two new vaccination schools have been opened, at 68 Elm street and in the Board of Health building, at Sixth avenue and Fifty-fifth street. The physicians at both these places have been busy attending to the many comers. The law states that "every child of school age who has not been vaccinated within six years, must submit to the operation under penalty of exclusion from the city schools." All precautions are taken by the Health Board physicians. In every case a new needle is used to scratch the arm, and by means of a fresh, unused splinter of wood the virus is spread over the wound. While the Health Board facilities are intended primarily for children about to enter school any one who desires may take advantage of them. In 1898 there were vaccinated 521,747 persons, and no doubt the number will be increased this year.

At the meeting of the Board of Estimate on September 7th, Comptroller Coler presented a report favoring several important changes in the disbursement of city funds among private charitable institutions. Copies of letters of suggestion and advice from the State Board of Charities (which have already been noticed in this column), from the New York Medical League, the Charity Organization Society, the State Charities' Aid Association, and extracts from various other reports are appended to this report, together with tabulated statements from the institutions themselves, the whole making a pamphlet of 100 pages. The report refers to the passage in 1894 of a constitutional amendment providing that the Legislature might authorize, but not compel, public support for private institutions. This amendment was intended to stop the custom, which had obtained among private charitable institutions, of going directly to the Legislature instead of to the Board of Estimate for public help. It was not, however, retroactive. The report further points out that the Stranahan amendment to the charter is destined to revolutionize the relations existing between the city treasury and private eleemosynary institutions. It authorizes the Board of Estimate to appropriate money for the aid of private charitable organizations and to increase or diminish the amounts of such aid regardless of the recognition which any institution may, or may not, have obtained from the Legislature and regardless also of the amounts fixed in prior budgets. Since the passage of this amendment the Comptroller has been investigating the subject of municipal aid for private charities. In 1898, it is shown, the city expended $2,334,456.49 for prisoners and public paupers, and $3,131,580.51 for paupers in private institutions. As compared with the latter figures Chicago expends $2796; Philadelphia $151,020; St. Louis, $22,579.30; Boston, nothing; Baltimore, $227,350; Cincinnati, nothing; Cleveland, nothing; New Orleans, $30,110; Washington, nothing; Detroit, $194,500; Milwaukee, nothing; Newark, $7,500; Jersey City, nothing, and Minneapolis, $2000. About 21 per cent. of the cost of the maintenance of dependent children is borne by private benevolence in New York, while 97 per cent. is so borne in Philadelphia.

The Comptroller suggests that all appropriations of public funds for charitable purposes should be made only from the budget, instead of, as now, from the Excise Tax Fund and the Theatrical and Concert License Fund; and that the appropriations be made upon a uniform pro rata basis, all accounts of the institutions receiving aid to be kept so as to show the receipts and disbursements of public money separately, the disbursements being solely for annually recurring expenses of "care, support, and maintenance." There is at present no such basis for appropriations. The report states: "Eighteen institutions caring for dependent children are paid per capita $2 per week; sixteen are paid 25 cents per day; one is paid $104 per annum, and three $110 per annum. Four medical charities receive for infants 38 cents per day per capita; two receive $10 per month. Three lying-in hospitals receive for mothers, $18 per month; two receive $5 a week and one receives $12 a month. One receives $15

for each obstetrical case, and five receive $25. Three hospitals receive $1 per day for each patient, while three receive that amount only for surgical cases, obtaining only 70 cents per day for medical cases. Three reformatories receive $110 per annum; one $150 per annum, and one $2 per week. Seventy institutions receive appropriations aggregating $350,000 in bulk, *i.e.*, upon no basis of payment for actual service performed. It may be doubted whether the spirit of the constitutional provision prohibiting the donating of public money in aid of private individuals and corporations (with an exception in favor of the support of the poor) is complied with in the case of the appropriations made in bulk to institutions, regardless of the quality or extent of the services rendered in consideration thereof. Furthermore, if the charitable work performed by an institution is of such a character as to make it impossible to measure the value of the services rendered to the city, it may well be doubted whether that work can be of such a character as to warrant the donating of public funds.

"An examination of the returns made by institutions receiving appropriations in bulk from the city treasury, shows that many of them are using the public funds for purposes not authorized by the Constitution. The Constitution authorizes payments to be made for 'care, support, and maintenance.' The reports of a large number of institutions show the money annually obtained from the city carried forward wholly or in part as surplus. Different uses are made of this surplus, none of them, however, authorized by law, or warranted by a proper regard of the interests of the taxpayers. In some cases this surplus is used to pay off mortgage indebtedness, in others for permanent additions to buildings or for increase of investments and endowment. In one case the manager of an institution frankly explained a remarkable falling off in disbursements (so great that its charitable activities were almost suspended) by stating that it was proposed by exercising great economy for a number of years to let the city's annual appropriations accumulate into a respectable building fund. The flagrant nature of this abuse is so apparent that argument is unnecessary."

The resolution appended to the report provides that all institutions receiving public money shall at all reasonable times be open to the visitation and inspection by representatives of the Public Charities and Finance Departments, and that payments of appropriations may be withheld by the Comptroller if it appears to him to be to the public interests thus to do. Appropriations for dependent children receive special attention in the report. It is stated that 69 per cent. of the money appropriated for private charity in 1898 was for children. There were 50,638 children, or one for every 68 of the city's population cared for in private institutions at the public expense. The report quotes at some length passages from "American Charities" by Amos G. Warner, pointing out the evils of institutional life for young children, and emphasizing the necessity of the most careful administration of any institution caring for any considerable number of children of one age. As a guard against caring for children whose parents or relatives are able to undertake the charge, it is proposed to increase the system of inspection by the Examiners of Dependent Children, and to inaugurate the employment by the institutions of one visitor for every 500 children, whose duty it shall be to examine into the ability of parents or guardians to take partial or entire charge of their children or wards.

It is provided that no payments shall be made for inmates of any private charitable institutions unless the same shall have been accepted by the Commissioner of Public Charities, as a proper charge against the city, and it is ordered that institutions carrying on industrial enterprises in which inmates are required or permitted to work shall keep records showing the financial results of such work, the methods by which products are sold and whether prices below current or market prices are paid for such products; also, separately, the earnings per capita of inmates wholly or partly maintained by the public funds.

Mr. Coler calls attention to the fact that the New York Medical League has strongly attacked the policy of granting public subsidies to private hospitals and dispensaries, chiefly for the following reasons:

1. That many of the hospitals receiving public money are really business enterprises, the hospitals being merely necessary clinical attachments to medical schools, which would have to be maintained for the proper teaching of students, even if the city contributed nothing to their support, and which are worth more to the medical schools than the cost of maintaining them.

2. That the books of twenty-two hospitals receiving public aid show an annual surplus in excess of the amounts received from the city (*i.e.*, if the city appropriations were withdrawn they would still have balances to their credit).

3. That dispensaries do not exercise proper care in confining their activities to those who are really indigent, but promote pauperism by treating free those who are well able to pay for treatment.

Mr. Coler's report was laid over, and will probably be acted upon at the next meeting of the Board.

## CORRESPONDENCE.

### THE DIDACTIC LECTURE.

*To the Editor of the* MEDICAL NEWS.

DEAR SIR:—Medical school faculties and university committees are just about to meet to arrange their programs of study for the next scholastic year. The moment seems favorable, then, to present some considerations with regard to the didactic lecture. I was not a little surprised that no one raised his voice in opposition when Dr. Hobart A. Hare of Philadelphia some time ago in the columns of the MEDICAL NEWS saw fit to defend that dear, good, old-fashioned traditional institution in our medical schools.

To tell the plain truth it sadly needs defense, for its quondam supposedly natural defenders, the professors at medical and scientific schools generally, are deserting its standard and openly going over to the enemy; only a few veterans,

old in methods if not old in years, still rally to its defense.

We had the benefit of two pedagogic discussions here in New York City during the Christmas holidays, both of which trenched upon this subject of the didactic lecture in teaching the various sciences. Before the Association of American Anatomists Dr. Holmes of Philadelphia made a suggestion that attracted a good deal of attention and afforded not a little amusement. If the didactic lecture, he said, be considered absolutely necessary a committee of the best professors of anatomy in the country should be selected to draft an ideally complete and up-to-date set of anatomical lectures which the most taking elocutionist of the Association should talk into a phonograph and then replicas of the cylinders be sent to the various schools for use. If we must have the regular hour's talk so many times a week for the long-suffering medical student then this suggestion is deserving of serious attention.

In the discussion that ensued no one had anything good to say of the didactic lecture. Professor Burt Wilder of Cornell thought it had been and is yet overdone. Professor Gerrish of Portland, Me., thought it still has a place, but a very limited one, and that in a different form and with different aims from those which it is now thought to have. Professor Huntington of Columbia thought that the only place left for the didactic lecture is as a preparation for demonstrations to come, but not as a supposed means of conveying information by itself.

At the joint meeting of the affiliated scientific societies the subject for discussion was advances in methods of teaching science. Dr. Conklin, Professor of Zoology in the University of Pennsylvania, said that the merely didactic lecture is a thing of the past. The value of teaching in science is directly proportioned to its contact with the living sources of scientific progress. Demonstrations and laboratory work with original research even for the undergraduate are the needs of the hour. Dr. Huntington, Professor of Anatomy at Columbia, filling out what he had previously said before the Anatomical Society, declared that object-teaching has replaced theory. Demonstrations, and those to small numbers of students, so that personal attention can be given to each one are the key-notes of the modern method of teaching anatomy. Dr. Porter, Associate Professor of Physiology at Harvard University, outlined a course in physiology in which experimentation had the most prominent place and very little room was left for the didactic lecture, practically none for the lecture as a lecture, but only as a preparation for experiments or sometimes as a historical résumé of the subject. At the end of his paper he epitomized the subject in the following striking manner: "We cannot hope to escape (in this suggestion of reform in medical education) what Bismarck has called the phrase watering-pot. We shall have urged against us certain sanctified expressions such as the accumulated wisdom of centuries. Let us answer that the system by which we now teach anatomy and physiology (may we not insert here, all of medicine?) began as a makeshift and has become a dogma. It is sanctified by some centuries of repetition, not of experience, for systematic experiments in medical pedagogy have rarely been made; the oracles have been severe with those who meddled with the tripod." I think that these quotations at least justify the assertion that it is not merely medical editors who think that the didactic lecture is a thing of the past.

Dr. Hare quotes Professor Hirst's letter in a recent issue of the *Philadelphia Medical Journal*. Professor Hirst's opinion should carry a great deal of weight. His students, I am sure will, without exception, agree with me that he is the most interesting teacher we have ever listened to. He, of all men, should have a right to defend the didactic lecture. This is what he says: "There is, in my opinion, no greater force in medical teaching to-day than the didactic lecture properly given. The lecturer, however, must be able to impart his knowledge to others; he must be thoroughly familiar with the current world literature; he should have every illustration which appeals to him as instructive or interesting reproduced in large size; he should have every instructive case of his own photographed or drawn from life and should have these illustrations enlarged; models should be purchased wherever procurable; specimens should be collected and preserved for demonstration with indefatigable industry, and all this material should be employed to illustrate the lecture. One of my lectures has cost very nearly $1000 for models, pictures, and specimens, and very few have cost less than $50."

Professor Hirst's lectures are not didactic lectures but demonstrations. If the holders of all chairs will illustrate their subjects as unsparingly as Dr. Hirst does his, and take every possible occasion to demonstrate, not to dryly describe, there will be no further need of discussing the didactic lecture.

One of the first lessons in Professor Hirst's course is a demonstration of the coagulum of milk when mixed with rennet. Do any of his students ever forget the flocculent coagulation of human milk, the almost similar coagulum of diluted cow's milk, the thick curds of undiluted cow's milk? One of his last lectures in the course is a demonstration of symphyseotomy on the cadaver. *Satis superque dixi*, there is no need to defend such didactic lectures; they really merit the adjective didactic, for they teach. Though opportunities be invitingly open for the illustration of lectures as Professor Hirst suggests how few of them are taken. Many professors do not seem to have interest enough in their courses to even prepare suitably the current lectures, let alone plan for future ones.

Professor Hare thinks that the popularity of lectures upon history, literature, art, and travel attests the fact that people enjoy and learn much by attending them. As to enjoyment it may pass, though I think the allusion unfortunate since there is nothing in the world less enjoyable than the didactic lectures delivered in most medical schools. It is only a lofty and sadly mistaken sense of duty that brings students to most of them at all. As to what is learned from *popular* lectures the educational world is pretty well agreed that a certain amount of information, often of a most useless, disconnected, and undi-

gested kind, is gained, a heap of conceit is accumulated and a supposed scientific or other basis obtained on which to build the most inane theories if any attempt is made to develop or apply the knowledge thus acquired. A lecture is well enough to communicate a few interesting facts whose acquisition may be displayed brilliantly in conversation, but think of teaching a man to build a locomotive, or the still greater absurdity of fitting him to repair one, by a series of lectures!

Finally Professor Hare thinks that there is no better stimulus than to follow the lecture courses of certain men, and mentions two honored names that will ever stand out in the annals of American medical pedagogy, Agnew and DaCosta. These and such as these are the exceptions that occur to every rule,—men of the widest learning, of magnetic personality of far-reaching personal influence, and a great gift for teaching. Wherever there are Agnews and DaCostas they will be listened to with interest, but I doubt if even these men themselves, thoroughly in touch as they ever kept themselves with the existing needs of medical teaching, would lecture now as much as they did in their day. Billroth, during his time the most interesting clinical lecturer in Europe, gave up the didactic lecture toward the end of his life, after giving it a very fair trial, because he found he could not interest his students.

This subject of the didactic lecture was discussed at the German Medical Congress at Wiesbaden last April, and as the representative of several American medical journals I gave it special attention because of its present interest to Americans. In the German universities very, very few didactic lectures are given. After the preparatory sciences, anatomy, physiology, etc., have been completed there are no didactic lectures on which attendance is compulsory. The state of opinion regarding them is very clear. A few of the old men like Von Ziemssen of Munich still think a regular course of didactic lectures desirable. Most of the old men, however, do not give didactic lectures and it is their influence that keeps the lectures from having an important place in the universities. All of the young men seem to agree with Von Jaksch, who takes high ground against the didactic lecture.

Didactic lectures are still popular in France, but they are very different from what we know as the didactic lecture. They are finished studies, in a classic style, of some up-to-date subject in which all the recent material is accumulated, the newest theories discussed, the conclusions on doubtful points suggested, the probable future development of the subject outlined. Read Professor Raymond's lectures on the muscular dystrophies, or Landouzy on serum-therapy, or Marie on nervous diseases, especially on tabes; or Widal's lectures (if they are published) on pericarditis, or Debove on any subject, and the realization is not long in coming that there is a place for these didactic lectures. They really show that familiarity with the current world literature which Professors Hirst and Hare demand, but such lectures in regular courses are delivered nowhere outside of France.

The subject of medicine has become so vast that it is folly to attempt to teach all its infinite details even to the most willing medical student. The idea of pumping into him by means of the didactic lecture a mass of information that he has not the time to digest and assimilate and then expecting him to apply it practically is a serious mistake—it is more than that, it is a mortal sin against the good rules of modern pedagogy. President Eliot of Harvard has well said, "We must educate for power, not for information." We must train people in habits of scientific investigation, train them in the exact scientific method, train them so that they may develop themselves, not load them down with infinite details of too often useless information. In the other sciences this ideal is being realized more and more. The last few years have seen great advances along these lines in the teaching of the medical sciences. It has seemed to us on the outside, however, as though the progress of reform in the teaching of medicine is impeded by the interested motives of certain professors who foresee their occupation gone if once it is generally conceded that the didactic lecture is a thing of the past, or who realize that much more time will be demanded of them, that the newer methods must be learned, that their ease and comfort will be seriously disturbed, and that the present convenient method of thinking out in the ten minutes that one spends in his carriage on the way to the lecture-room what is to form the mental pabulum of some hundreds of students for an hour or more must be given up for hours of serious thought and reading on what is latest in medicine and on how best to advance the teaching of medicine.

JAS. J. WALSH, Ph.D., M.D.
1973 SEVENTH AVENUE,
NEW YORK, September 9, 1899.

## OUR LONDON LETTER.

[From Our Special Correspondent.]

MOSQUITO EXPEDITION — POSSIBLE VALUE OF "CAUSTIC" ETHER RAYS—NEGLECT OF PATIENTS IN POOR-HOUSE INFIRMARIES—NEW BUILDINGS OF WOMEN'S MEDICAL COLLEGE—HUMAN VERMIN IN THE PARKS—PRACTICAL ACTION AGAINST STREET NOISES.

LONDON, September 6, 1899.

THAT sturdy little product of "individualism" the Liverpool School of TropicalMedicine has scored another triumph over its cumbrous state subsidized rival and predecessor, the London (Government) School. While the latter is not likely to be in a position to do anything but ask for more money for a month or more yet, the Malaria Expedition of the former has wired back its discovery and identification of the "criminal" species of mosquito (*Anopheles claviger*) and the mapping out of the breeding-places. By the very next steamer another investigator, Dr. Fielding Ould, with additional equipment, will be despatched by the School to reinforce the original party of five. It is to be hoped that the Colonial Office, now that the Anopheles "hare" has been "caught" by private enterprise will have the energy to send out a few experts to help to "cook" it.

A most interesting suggestion has been made by Mansell Moullin in his Presidential Address before the Roentgen-Ray Society in regard to the "caustic" and

destructive rays given off by the radiating bulb. These so far have simply been a source of annoyance by the destruction and almost escharotic changes produced upon the skin of the patient, but the speaker was inclined to believe that in the future they would come to be regarded entirely apart from the X-rays which they accompany as a valuable addition to our therapeutic agents. The powerful catalytic changes which they are capable of setting up in the surface-tissues exposed to them ought, when properly controlled and understood, to prove of yeoman service in the treatment of various skin affections, including lupus and superficial ulcers, especially of infectious origin.

These other rays are entirely distinct from the true Roentgen rays, and screens which are perfectly pervious to the latter can be used to shut them off completely, so that as an obstacle to future skiagraphic work they can be completely avoided.

The existence of a "Roentgen-Ray Society" among medical men and physicists certainly strikes one as one of the specialist specializations of specialism. No doubt its existence is fully justified in view of the magnificent possibilities of usefulness of the new-found agency and the need for cooperation of several distinct classes of workers in their development but we trust it will not be regarded as a precedent and followed by "sphygmograph Societies", "Cystoscope Clubs" or "Apostali Associations."

Another revolting illustration of the natural callousness and brutality of officialdom if left to itself has just been furnished from Stepney Union Workhouse. Two deaths under suspicious circumstances having occurred within two days, a coroner's jury investigated the matter. The first case was that of a boy aged nine suffering from tuberculous diarrhea. On Saturday afternoon his father came to see him and was informed that he was asleep and he must sit quietly beside the bed without waking him. The poor fellow did so for nearly half an hour when on looking more carefully at his boy, he found to his horror that he was dead. The nurse alleged that she had seen the boy "apparently asleep" only about ten minutes before the father came, but as it developed that she and one other nurse had charge of 100 patients scattered through six wards day and night, it may be imagined how closely each individual case could be attended. The coroner stated that at a former inquest from this institution some years ago, it was discovered that there was only *one* nurse for 800 patients! Now there were six and he thought that at this rate the institution might become a model one in the year 2752 A.D.

The other case was that of a coal-porter, aged 48, who in the delirium of pneumonia had been put in a *straitjacket and tied down with two sheets* for twelve hours, at the end of which time he, not unnaturally, died of "heart-failure due to exhaustion." No doctor had seen him for thirty-six hours before his death as the intelligent attendant felt sure he "was going to die, anyhow." And we are sorry to say that the action of the medical officer calls for prompt explanation of some sort, as all he did for the patient, by his own testimony, at his first and only visit to him, was to order him *into the padded room*, as "it was impossible to administer a sleeping draught" (?)! From this interesting chamber the patient escaped because "*the door was away for repairs.*" We must confess we think the coroner's estimate of future progress in Stepney workhouse too hopeful.

The new buildings at the London School of Medicine for Women, in connection with the Royal Free Hospital, are rapidly approaching completion. The first wing was finished about a year ago and the second is now nearly ready for occupancy, while the third will be built during the coming year. As the school crowded 190 students last year into its one wing and the old remodeled private house in which the school has held its sessions for twenty-four years past it would be seen that the new buildings are badly needed. Nearly $90,000 has been expended upon the building and $60,000 more is needed to complete it.

The prolonged hot, dry weather in London has rendered one public service in aggravating to a point beyond further toleration a nuisance which has been gradually growing and spreading in London for some years past, and this is the invasion of the public parks for lounging, eating and sleeping, day and night, by tramps, "bums," scalawags of every description, male and female. Greasy, filthy, blear-eyed and red-nosed, these unclean beasts may be seen sleeping off last night's stale-beer orgie upon the benches and the grass of almost all the West End parks, with a special preference for the quiet corners and most secluded nooks, where they utterly destroy the beauty of the scene and sweetness of the air. Swarming with vermin and reeking of the two and seventy smells of Cologne, they are an insult and a source of possible infection to every child or woman who enters the park. This is unpleasant enough for adults, but when we remember that Regent's, Primrose Hill, Battersea, and even aristocratic Hyde Parks are the sole exercise-grounds and breathing space of thousands of children of all ages, some with, but the vast majority of them without, nursemaids other than their elder sisters—who ought to be perfectly secure in sitting, rolling, tumbling, and playing upon the green grass it becomes a nuisance bordering upon an outrage. And in no other city than London would it be tolerated for a week, but these vagabonds be free men and British subjects and all such have a right to use and frequent public places.

Now, however, that they have taken to using the parks these hot nights as sleeping places, leaving the grass greasy with their filth and strewn with broken victuals the patient public is showing signs of getting roused and something decided will be done.

Of course, every possible precaution should be taken against interfering in any way with the full and free use of these "Lungs of London" by the poorest of the poor, no matter how shabbily dressed so long as decent and clean, but there ought to be no practical difficulty in drawing up some sort of an ordinance which will give the police power to exclude tramps and vagabonds, of unclean, disreputa-

ble and offensive appearance and odor, a mere handful of whom destroy the comfort, interfere with the enjoyment, and are a source of danger to the health of hundreds of children, to say nothing of women. The mere sight of one of these creatures is enough to spoil all enjoyment of that part of the park for sensitive women and the thought of their previous occupancy of a seat is enough to deter most ladies from making use of it, no matter how fine the day or how tired of walking they may be.

The much-talked of crusade against street noises and their maddening wear upon the modern nervous system has at last found its paladin. Admirable, if a little strenuous, in theory, it has till now lacked the man of action, the Boulanger who could put himself at its head and lead on to victory. Now, however, he has arrived. His name is George Sims, journalist, of Clerkenwell, and in this manner has achieved immortality. A "mission-service" being held in the street before his windows, he endured the sonorous bray of the invocation, the thin, musical agony of the hymn, and the fierce, nasal chant of the preacher till he could bear it no longer. Out he rushed like a lion roused, knocked over the lamp and sat down violently upon the harmonium. Like most other reformer-heroes he landed in the police court. Here, alas, his confidence in his mission failed him and instead of proudly avowing his act and glorying in the noble impulse that led to it, he took refuge in most inartistically unprobable excuses. He went out to ask the preacher to stop and in the dark fell against the harmonium and accidentally knocked over the lamp. However, the story, tame as it was, "worked," for the magistrate accepted it as gospel truth, discharged Sims and expressed his sympathy with him in his endeavor to "suppress noisy persons." From which we infer that he must have sat upon the preacher as well as the harmonium. Though possibly the wish is father to the thought. Nor was this all, for the court went on to comment severely upon the harmfulness of unnecessary street noices, even though of a religious character. These he denounced as "intolerable and a mistake . . . their intentions are good, but they do not benefit mankind under the circumstances," and with this dictum we think all physicians will cordially agree.

## SOCIETY PROCEEDINGS.

### HARVARD MEDICAL SOCIETY OF NEW YORK.

*Regular Monthly Meeting, Held May 27, 1899.*

THE Vice-President, DR. WILLIAM B. COLEY, in the Chair.

The first paper of the evening was read by DR. EUGENE FULLER, and was entitled

#### SOME POINTS ON VESICAL NEOPLASMS.

It is only within the last few years that vesical neoplasms have received much attention. Neoplasms of other organs, because more frequent and more readily operable, have been the subject of more study. Then the surgery of the bladder, until recent years was discouraging in its results, and anything like radical operation for tumors of the viscus was considered too risky. Present active study is making up for this neglect in great part and we now know that neoplasms of practically all types, benign, intermediate, and malignant occur in the bladder. Here, perhaps more than anywhere else, has come the realization that certain tumors which in the beginning are composed of elements that would cause them to be classed as benign, may degenerate and become malignant.

Papillomata are the tumors originally benign that most frequently take on this degeneration into malignancy. They are easily hurt and a series of traumata almost always brings on malignant degeneration. Their most frequent sites are in the trigonum and around the ureters and they occur most frequently in males. Vesical polyps resemble nasal polyps in many ways, in their structure particularly and in their tendency to recur after removal. Other benign tumors are comparatively rare. Myomata occur especially in fetal remnants of the ducts of Müller. The tumors are often mixed in character containing also fibrous tissue. They sometimes grow to a large size. The mucous membrane may be destroyed above them from pressure, and ulceration results. Only one case of angioma of the bladder has been reported and that by Albarran. When benign tumors occur in the upper part of the bladder operation is easy and the results very favorable, but unfortunately, they usually develop in the lower part of the viscus where operation is more difficult.

Of malignant tumors sarcomata are rare and develop usually in the young and at the base of the bladder. Though the opposite has been said they seem to occur quite as often in females as in males. Other malignant tumors develop at times as the result of irritation. For instance, a number of carcinomata of the bladder have been noted in the employees of a German aniline dye factory. They took their origin about the orifices of the ureters, which indicates the necessity for careful search especially at these points when looking for beginning neoplasms.

The most constant symptoms of vesical neoplasms are hematuria, pain, and incontinence of urine. Hematuria is the most uniform single symptom. It occurs in 90 per cent. of papillomata, in 80 per cent. of sarcomata, in 75 per cent. of carcinomata. There are cases, however, as may be easily understood from these statistics in which it does not occur at all, so that its absence cannot be used to exclude the presence of a neoplasm. Pain is not of so much importance as a diagnostic symptom. Diagnosis is not, however, very difficult as a rule, when the cystoscope is employed.

Once the presence of a vesical neoplasm is suspected, extreme care should be taken as to intravesical examinations, for infection will greatly complicate the course of the case after operation. Fenwick lays great stress on the advisability of not making an intravesical examination until all is ready for operation.

According to the cystoscopic appearance Fenwick gives the following hints for the diagnosis of the character of the tumor: If the mucous membrane is pinkish above it

the tumor is in good condition, and is usually benign. If the mucous membrane is smooth, the tumor is usually superficial. A whitish appearance of the mucous membrane indicates carcinoma and phosphatic deposits on the surface of the tumor point to malignancy.

In operating for tumors of the bladder the suprapubic route seems in every way the most desirable. For certain friable tumors some have thought of intravesical manipulation without incision of the bladder walls. Nitze has suggested this method by instrumentation through a cystoscopic tube, but a certain risk of subsequent hemorrhage exists for which a suprapubic section may have to be done later. Chismore suggested engaging small polypoid tumors by means of suction, which draws the tumor into the tube and enables it to be twisted off. Dr. Fuller has succeeded in this method once, but besides securing very little if at all, against recurrence, there is the dissatisfaction of working in the dark and the risk of subsequent hemorrhage.

The suprapubic operation gives an especially good field for the control of hemorrhage. In severe hemorrhage the bladder may be packed with gauze. The gauze should be put in in numbered slips so as to facilitate its removal, but there is always some shock on taking them out. The ideal operation is to close the bladder entirely, a practice that Guyon and Albarran introduced, and depend for drainage entirely on a catheter *a demeure*.

Papillomata and carcinomata are so liable to recur that it would seem best in all cases to remove with the tumors a portion of the bladder wall. A resection of the bladder is not considered so serious an operation as it used to be. The mucous and muscular layers may be cut with a scissors with serrated edges so as to avoid hemorrhage as much as possible. An elliptical piece may be removed and then the edges brought together. In all the movable parts of the bladder this procedure involves very little difficulty and practically no risk. In the fixed portions of the bladder it is more dangerous and difficult but it may be accomplished successfully, if proper care be taken.

DR. EGBERT GRANDIN, in the discussion which followed, said that neoplasms in the female bladder are rare. Owing to the relations with the vagina, moreover, they are easier to remove. A T-shaped incision in the anterior vaginal wall with the flaps dissected well back gives an excellent field for operative work on the female bladder.

DR. NOEL said that while irritation sometimes leads to malignant degeneration of benign growths of the bladder, it is sometimes true for villous growths especially, that disturbance of them or removal of a portion of them leads to their entire disappearance. Alcoholic injections into the bladder sometimes accomplish this favorable result of making villous growths disappear. In a recent case injections of alcohol of 20 per cent. and finally of 50 per cent. strength were used. Clumps of villous material were passed from time to time per urethram until finally the growths completely disappeared.

DR. COLEY mentioned a case that illustrated very forcibly the change from benignity to malignancy in vesical tumors. A tumor was removed by Dr. Ferguson from a patient in 1894, and on careful examination proved to be a simple papilloma. It recurred and the new tumor proved to be an infiltrating epithelioma of the purest type.

DR. MURRAY said that in the treatment of vesical tumors in women the great dilatability of the female urethra must be borne in mind. He had just had a case under observation of a nurse who had never menstruated and who proved on examination to have no vagina. She had had sexual relations per urethram but without the occurrence of incontinence of urine. It is evident then, that small villous growths might easily be grasped through a urethral speculum, twisted off, and then their bases touched with nitrate of silver.

DR. FOOTE said that recent German statistics of operations for malignant tumors of the bladder show a high operative mortality, and only very few survivals for any length of time after operation, so that the advisability of operation is questionable.

DR. FULLER said, in conclusion, that general statistics condemn operation, but the work of selected operators must be judged on its own merits. It is only the work done at the Necker Hospital, Paris, that is of a sufficiently high order to give encouraging results. Cases of vesical neoplasms are, as a rule, so hopeless that it is better to do something that promises, even though at considerable risk, some relief from present pain and trouble and some prolongation of life than to sit idly by and talk soothingly to the family. The general statistics of prostatectomy are almost as bad as those of the operation for vesical tumors, yet in certain operators' hands excellent results are by no means rare.

DR. HENRY C. COE being unavoidably absent his paper, entitled

### SOME NOTES ON THE INDUCTION OF PREMATURE LABOR,

was read by the secretary, Dr. Walker.

The author said that in reading the text-books and listening to lectures on the subject one would be inclined to think that the induction of premature labor is one of the easiest tasks in medical practice. A certain technic must be employed it is true, but if directions are carefully followed it would seem that there would be no difficulty in exciting the pregnant uterus to contraction, and once begun these contractions made to continue until the uterus is emptied. When it comes to actual practice in this matter there must certainly be some rather disagreeable and disappointing developments as to the ease with which premature labor may be brought on.

Gynecologists generally know now that the pregnant uterus will tolerate without reaction sufficient to produce abortion, an amount of tampering with that would have been thought utterly incredible some years ago. The author related some recent cases in his experience that illustrated this fact.

CASE I.—A multipara, pregnant for more than four months, developed a large abscess behind the uterus. Peritonitis set in and there was high temperature for several days. On laparotomy so many adhesions were

found that the abdominal incision was closed and the abscess drained per vaginam. Quite an amount of offensive pus escaped and hydrogen peroxid and gauze drainage were employed. Despite the surgical manipulations, the presence of the gauze and the occurrence of peritonitis and fever, abortion did not occur at this time but more than a month later when the woman was up and about.

CASE II.—Multipara; pregnant five months. In this case an adherent cyst of the ovary became twisted, and intracystic hemorrhage and beginning necrosis resulted. At the laparotomy the uterus was lifted up and surrounded by hot towels. The operation was much longer than was at first anticipated and sutures had to be taken in the broad ligament and in the peritoneum covering the uterus. The case ran an absolutely afebrile course and no symptoms of abortion supervened. The patient was up and about feeling perfectly well in four weeks. Fetal movements were very active and could be easily felt and seen by the examiner.

CASE III.—Multipara; pregnant four months. Very similar to Case II. An adherent dermoid was removed from Douglas' pouch without producing the slightest uterine reaction. The patient carried her child to full term and had a normal labor.

As a matter of fact, however, these cases of operative intervention involving at least indirectly the pregnant uterus yet without setting up labor pains have become so common of late years that they no longer attract much attention. They serve to show very well the tolerance of the uterus in most cases.

In text-books it is often said that dilatation of the cervix is very liable to be followed by abortion. Nearly every gynecologist has more than once dilated the cervix for obstinate vomiting without producing any such effect. The author never has had abortion occur in his practice from this cause, though he introduces the branched dilator and separates the blades to their fullest extent. In fact unless the membranes are ruptured at the same time he does not think abortion is liable to take place.

The introduction of a bougie is sometimes stated as sufficient to induce labor pains. He quoted a case in which the introduction of a sound followed by intra-uterine faradization failed to produce the slightest effect, and the cervix had to be forcibly dilated and active removal of its contents proceeded with.

The use of Barnes' bags and of the gauze tamponade are the other methods usually mentioned for producing abortion. The bags seem to be going out of fashion of late, at least we do not hear as much of them at society meetings as we used to. The author said that he had had cases, however, in which neither gauze nor bags (nor sometimes both) produced satisfactory labor pains, and the manual or instrumental delivery of the child had to be undertaken after their unsuccessful employment. While they did not bring on labor pains they did produce a dilatation of the cervix that was of the greatest service in the subsequent manipulations.

CASE I.—A multipara. Various sizes of Barnes' bags were introduced and finally the double McLean bag, which the author had often found useful. Some transient pains resulted but without the desired effect of inducing labor. After thirty-six hours of waiting manual dilatation was performed. It was greatly simplified by what had been accomplished by the bags and healthy twins were delivered by podalic version.

CASE II.—Multipara. Three yards of gauze was first packed within the os internum, and then increasingly large sizes of bags were used. Absolutely no pains occurred though cervical dilatation was perfect so that at the end of forty-eight hours manual extraction was carried out and proved very easy.

CASE III.—Multipara. First gauze was inserted and left for twenty-four hours without effect. Then bags were used and left in as long but with the same result. Then manual dilatation had to be done, but as usual after the use of the bags and gauze, was easy of accomplishment. Mother and child both did well.

CASE IV.—Multipara. More than four yards of gauze was inserted into the lower uterine segment. No reaction took place in twenty-four hours; then a large double bag was inserted but effective labor pains were not induced. Manual extraction was extremely difficult in spite of the good dilatation that had been effected. In another case at the fourth month of pregnancy the insertion of a steel sound and then of two yards of gauze produced no effect, not even dilatation, and the uterus had to be emptied manually.

These cases show that as a rule the Barnes' bags and the gauze tamponade are useful in producing softening and dilatation of the cervix, but they often do not bring on effective labor pains. It would seem better then, after these means have been tried without result for thirty-six hours, that the obstetrician should proceed actively to empty the uterus rather than keep the patient and her friends any longer in suspense.

In the discussion DR. MURRAY said that there is no need to excite labor pains, and that in fact rapid extraction can be accomplished better without them especially under an anesthetic. Personally he has been very well satisfied with the effect of a steel dilator and then the Barnes' bags to soften the os. He can tell the time at which he will be able to empty the uterus as exactly as he is able to appoint the time for a laparotomy. For uremia or persistent emesis he dilates under anesthesia with successively larger steel bougies until two fingers can be inserted. He then employs placental forceps, taking special precautions to see that the cornua of the uterus are thoroughly emptied. In a recent case, in a doctor's wife, he employed forcible rapid manual dilatation with excellent results. First one finger was inserted in the os, then gradually the cone-shaped fingers were forced in. After three-quarters of an hour sufficient dilatation was secured and a child weighing 15¾ pounds was delivered alive. He does not believe in the use of gauze but thinks Barnes' bags of great value especially in placenta previa.

DR. GRANDIN said that he was glad to find that the cobwebs of a too insistent tradition are being brushed away from certain important practical medical subjects. In no branch of medicine does tradition count for more

than in obstetrics and in no question does it cause more hesitation as to the proper course to be pursued than in this one of inducing premature labor. There is no need of complicated instruments or apparatus.

Dilatation of the cervix can be produced manually in half to three-quarters of an hour. In placenta previa 85 per cent. of the women and 66 per cent. of the children are saved by this method and there is no other that gives anything like as satisfactory results. The cervix yields to the fingers somewhat as the sphincter ani does, and only patience is needed to secure an entrance. A danger that must always be looked for is post-partum hemorrhage and for this a large gauze pack is necessary. At least ten yards of gauze two inches wide should be packed into the uterus and made to completely fill it, if there are signs of hemorrhage and the uterus has not contracted well.

DR. COLEY presented the specimens from a case of carcinoma of the cecum, which showed some interesting features. The patient was operated on for what was thought to be a chronic appendicitis, but at the operation it was found that a cancer of the cecum existed that had been communicated to an adherent coil of small intestine. The whole of the cecum and about five inches of small intestine were removed. The patient made a good recovery. The interest of the case consists especially in the fact that the carcinomatous process had started in the cecum and had invaded the coil of small intestine that had become adherent to it, an example of the communication of cancer to a contiguous viscus that is sufficiently rare to be worthy of special notice.

## REVIEWS.

ON FRACTURES AND DISLOCATIONS. By PROFESSOR DR. H. HELFERICH of Greifswald. Translated from the Third German Edition by J. HUTCHINSON, JR., F.R.C.S., Surgeon to the London Hospital. New York: Wm. Wood & Co., 1899.

THE volume before us is one of the Lehmann atlases, which has in past editions of the original received much well-merited praise. The plates are very well reproduced and are very instructive though somewhat diagrammatic. The translation of the text, a condensed outline of the subject, has been well done by Dr. Hutchinson, but some elementary matter has been altogether omitted. The main value of the atlas lies in the plates and their appropriate descriptive text, and for these the volume may be highly recommended to both physicians and medical students.

STUDIES FROM THE DEPARTMENT OF PATHOLOGY OF THE COLLEGE OF PHYSICIANS AND SURGEONS (Columbia University), New York. Vol. VI.

THIS volume of reprints is taken up mainly by a study on ganglion cells by Dr. James Ewing. It contains, besides, some bacterial studies by Drs. Meltzer and Cheesman, a report of a case of acromegaly by Dr. Bailey, and a readable article on snake poisons by Dr. Langmann.

## THERAPEUTIC HINTS.

*For Hyperemesis.—*

℞ Menthol . . . . . gr. iss
Cocainæ hydrochlorat. . . gr. iiiss
Syr. simplicis . . . . ℥i
Spiritus . . . . . ℥ii.
M. Sig. One teaspoonful every half hour.—*Morel-Lavallée.*

*Formula for a Creosote Pill.—*

℞ Creosoti . . . . . parts iii
Ol. amygdal. dulc. } aa. . . parts i.
Sacchari }
Magnesiæ }

Mix the oil and creosote and rub with the sugar in a mortar. Add the magnesia, mix thoroughly, and let stand for twenty-four hours before preparing the pills.

*Paraformaldehyd Collodion in Dermatology.*—UNNA recommends this preparation as a caustic for the removal of small cutaneous growths. Paraformaldehyd is not soluble in collodion, but enough is contained in the latter for the purpose indicated. The patient can make the necessary repeated applications himself, as the caustic action is limited and not severe. The area to be covered should be rubbed briskly before the collodion is applied:

℞ Paraformaldehyd . . . . gr. xv
Ol. ricini . . . . . *m.* viii
Collodii . . . . . ʒ v.
M. Sig. External use.

*For Herpes Zoster.—*

1. ℞ Cocainæ hydrochlorat. . . gr. iv
Zinci oxidi . . . . gr. xvi
Amyli . . . . . ʒ iiss.
M. Sig. External use.

2. ℞ Ac. borici . . . . gr. xxx
Zinci oxidi . . . . ʒ i
Glyceriti amyli . . . ℥ i.
M. Sig. External use.

*For Sciatica.—*

SIEGRIST of Zürich has found the application of hot moist compresses to afford striking relief in this affection. A piece of flannel is placed in very hot water, then taken and wrung out so that it does not drip. This can be done conveniently by wringing it inside a towel in such a way as to protect the hands. The flannel is then laid along the thigh of the patient—if the skin is very sensitive a layer of flannel is placed under the compress—and the whole covered with several thick layers of dry flannel. The compress is changed in about ten minutes, and the process kept up for an hour or two at a time, and repeated several times a day. The value of these fomentations in many painful affections is well known to students of hydrotherapy, but is not sufficiently recognized by physicians in general. The treatment demands considerable time, and must be skilfully executed in order to gain the desired results.